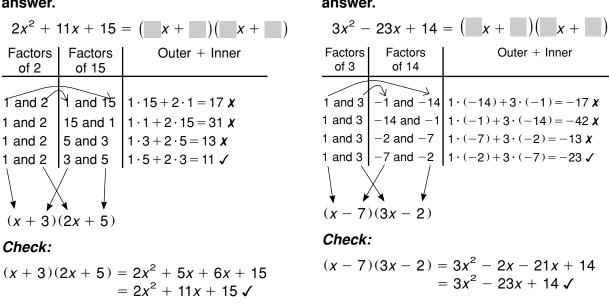
LESSON 8-4. Factoring $ax^2 + bx + c$

When factoring $ax^2 + bx + c$, first find factors of a and c. Then check the products of the inner and outer terms to see if the sum is b.

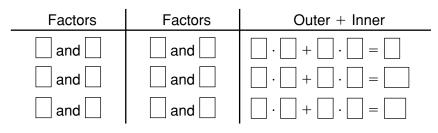
Factor $2x^2 + 11x + 15$. Check your answer.

Reteach

Factor $3x^2 - 23x + 14$. Check your answer.



1. Factor $5x^2 + 12x + 4$ by filling in the blanks below.



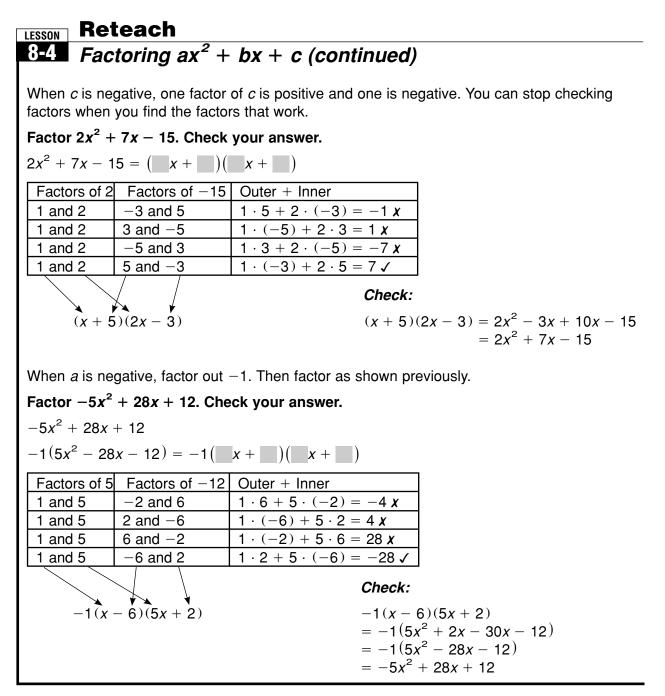
Factor each trinomial.

2. $3x^2 + 7x + 4$

3. $2x^2 - 13x + 21$

4. $4x^2 + 8x + 3$

Date Class



Factor each trinomial.

5. $3x^2 - 7x - 20$

6. $5x^2 + 34x - 7$ 7. $-2x^2 + 3x + 5$

The diam part is by the set of	D			D		
Padd rank threads, there is positive. Log 4: 17 (12): $2 + 4^{-1} + 12 + 3$ $4 + 3^{-1} + 12 + 12$ $4 + 3^{-1} + 12 + 12$	Practice A 8-4 Factoring $ax^2 + backson backson$	-bx + c			⊢ bx + c	
$1.5x^{2} + 17x + 0 = 2.5x^{2} + 10x + 3 = 3x^{2} + 17x + 30 = 3x^{2} + 17x + 30 = 3x^{2} + 17x + 30 = 3x^{2} + 10x + 4 = 2.5x^{2} + 1$					+ DX + C	
$ \int_{2}^{2} \frac{dx^{2} + 12x + 10}{(2x + 2)(2x + 5)} = \frac{2x + 1)(2x + 7)}{(2x + 1)(2x + 7)} = \frac{2x^{2} + 12x + 3}{(2x + 2)(2x + 1)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 2)(2x + 3)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x - 1)} = \frac{(2x + 3)(2x - 1)}{(2x + 2)(2x -$			3. $3x^2 + 17x + 20$		2. $3x^2 + 10x + 8$	3. $4x^2 + 24x + 27$
$ \begin{array}{c} 3x + 2y(2x + 5) \\ (3x + 2y(2x + 1) \\ (3x + $				$(2x \pm 3)(x \pm 5)$	$(3x \pm 1)(x \pm 2)$	$(2x \pm 0)(2x \pm 3)$
$\begin{array}{c} 7, \frac{1}{4x^2} - \frac{3}{3x^2} + \frac{3}{4x^2} + \frac{3}{2x^2} + \frac{3}{2x^$	4. $6x^2 + 19x + 10$	5. $8x^2 + 18x + 7$	6. $8x^2 + 19x + 3$			
$ \frac{Ax^2 - 5x^2 + 5x}{(4x - 1)(1x - 6)} = \frac{(3x^2 - 1)(3x - 2)}{(3x - 1)(2x - 5x} + 5x} = \frac{(3x - 5)(2x - 5)}{(2x^2 - 5x + 12)} = \frac{(3x - 3)(3x - 2)}{(2x^2 - 5x + 12)} = \frac{(3x - 3)(3x - 2)}{(2x^2 - 5x + 12)} = \frac{(3x - 3)(3x - 2)}{(2x^2 - 5x + 12)} = \frac{(3x - 3)(3x - 2)}{(2x^2 - 5x + 12)} = \frac{(3x - 3)(3x - 2)}{(2x^2 - 5x + 12)} = \frac{(3x - 3)(3x - 2)}{(2x^2 - 5x + 12)} = \frac{(3x - 4)(1x - 3)}{(3x - 4)(2x - 3)} = \frac{(3x - 4)(1x - 3)}{(3x - 4)(2x - 3)} = \frac{(3x - 4)(1x - 3)}{(3x - 4)(2x - 3)} = \frac{(3x + 4)(2x - 3)}{(3x - 4)(2x - 3)} = \frac{(3x + 4)(2x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 3)}{(3x + 4)(2x - 3)} = \frac{(x + 4)(3x - 4)}{(3x + 4)(2x - 5)} = \frac{(x + 4)(3x - 4)}{(3x + 4)(2x -$	(3x+2)(2x+5)	(2x+1)(4x+7)	(2x+3)(4x+1)	$(E_{x} + 1)(x + 4)$	$(A_{x} + 7)(x + 4)$	(2x - 4)(2x - 5)
10. $ba^2 - 2x + 8$ 11. $2(x^2 - 2x + 5)$ $(2x^2 - 3)(x - 6)$ $(3x - 5)(x - 3)$ $(3x - 1)(x - 9)$ 10. $bx^2 - 2x + 3$ $(3x - 5)(x - 3)$ $(3x - 1)(x - 9)$ $(3x - 4)(x - 2)$ $(x + 1)(2x - 3)$ 11. $bx^2 + 2x + 3$ $(3x - 4)(x - 1)$ $(3x - 4)(x - 2)$ $(x + 1)(2x - 3)$ 12. $bx^2 + 12x - 9$ $(3x - 4)(1x - 1)$ $(3x + 4)(1x - 1)$ $(3x + 4)(2x - 3)$ $(3x + 4)(2x - 3)$ 12. $bx^2 + 2x - 7$ $(3x + 4)(1x - 1)$ $(x + 2)(5x - 3)$ $(x + 4)(3x - 3)$ $(x + 3)(11 - 3)$ $(3x + 4)(2x - 5)$ 12. $bx^2 - 2x - 7$ $(3x + 4)(2x - 5)$ $(4x + 4)(3x - 4)$ $(5x - 3)(1x - 3)$ $(3x + 4)(2x - 5)$ 12. $bx^2 - 2x - 7$ $(3x - 4)(2x - 5)$ $(4x + 3)(3x - 4)$ $(-1(2x + 7)(x - 6))$ 13. $bx^2 - 4x - 2$ $(x + 1)(2x - 5)$ $(x + 1)(2x - 5)$ $(x + 1)(2x - 5)$ 13. $bx^2 - 4x - 2$ $(x + 1)(2x - 5)$ $(x + 2)(3x - 4)$ $(x + 2)(3x - 4)$ $(x + 2)(3x - 4)$ 14. $bx^2 - 4x - 2x^2$ $(x + 1)(2x - 1)$ $(x + 2)(2x - 5)$ $(x + 1)(2x - 5)(x - 5)$ $(x + 1)(2x - 5)(x - 5)$ $(x + 1)(2x - 5)(x - 5)$	7. $4x^2 - 33x + 8$	8. $9x^2 - 27x + 14$	9. $6x^2 - 25x + 25$			
$\frac{(3x - 2)(x - 4)}{(3x - 2)(x - 4)} = \frac{(3x - 5)(3x - 1)}{(3x - 4)(3x - 1)} = \frac{(4x - 3)(3x - 4)}{(4x - 3)(3x - 4)}$ $\frac{(3x - 2)(x - 4)}{(3x + 4)(3x - 4)} = \frac{(3x - 3)(3x - 4)}{(4x - 3)(3x - 4)}$ $\frac{(3x - 2)(x - 4)}{(3x + 4)(3x - 4)} = \frac{(3x - 4)(3x - 4)}{(3x + 4)(2x - 5)}$ $\frac{(3x - 4)(2x - 1)}{(3x + 4)(1x - 4)} = \frac{(3x + 4)(2x - 5)}{(3x + 4)(2x - 5)}$ $\frac{(4x + 3)(x - 3)}{(4x + 3)(x - 4)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 5)}$ $\frac{(4x + 3)(2x - 3)}{(4x + 4)(2x - 3)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 5)}$ $\frac{(4x + 3)(2x - 3)}{(4x + 4)(2x - 3)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 2)}$ $\frac{(4x + 3)(2x - 3)}{(4x + 4)(2x - 4)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 5)}$ $\frac{(4x + 3)(3x - 4)}{(4x + 3)(2x - 4)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 5)}$ $\frac{(4x + 3)(3x - 4)}{(4x + 4)(2x - 4)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 5)}$ $\frac{(4x + 3)(3x - 4)}{(4x + 4)(2x - 4)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 3)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(2x + 1)(2x - 7)}{(4x + 4)(2x - 3)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 3)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)}$ $\frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)} = \frac{(4x + 4)(2x - 4)}{(4x + 4)(2x - 4)}$ $(4x + 4)$		$\frac{(3x-7)(3x-2)}{2x^2-2x^2-2x^2}$				
Factor such themals, where is negative. ($2x + 13(x - 1)$ ($3x + 4)(1x - 1)$ ($x + 10(2x - 3)$ ($3x + 4)(1x - 1)$ ($x + 10(2x - 3)$ ($3x + 4)(1x - 1)$ ($x + 10(2x - 3)$ ($4x + 3)(x - 3)$ ($2x + 11(2x - 7)$ ($3x + 4)(1x - 1$) ($x + 10(2x - 3)$ ($4x + 3)(x - 3)$ ($2x + 1)(2x - 7)$ ($3x + 4)(1x - 1$) ($x + 10(2x - 3)$ ($4x + 3)(x - 3)$ ($2x + 1)(2x - 7)$ ($3x + 4)(1x - 1$) ($3x + 4)(1x - 3$) ($3x + 4)(1x - 3$) ($3x + 4)(1x - 3$) ($2x - 1)(3x - 4$) ($3x + 4)(2x - 5$) ($3x + 4)(1x - 1$) ($3x + 4)(2x - 5$) ($3x + 4)(1x - 1$) ($3x + 4)(2x - 5$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x - 1$) ($3x + 4)(1x -$	10. $5x - 22x + 8$	11. $21x - 22x + 5$	12. $12x - 25x + 12$			
Particular information number in integration in the substrate in the subs	(5x-2)(x-4)	(7x-5)(3x-1)	(4x-3)(3x-4)			
13. $10x^2 + 13x - 9$ 14. $3x^2 + x - 4$ 15. $5x^2 + 7x - 6$ Interval and the formation of the form	Factor each trinomial, where	<i>c</i> is negative.				
$\frac{(3x + 3)(x - 3)}{(4x^2 - 9x - 6)} = \frac{(3x + 4)(12x - 7)}{17.4x^2 - 12x - 7} = 16.6x^2 - 7x - 30} = \frac{(4x + 3)(2x - 3)}{18.6x^2 - 7x - 30} = 18.6x^2 + 12x - 40 = 10$ $\frac{(4x + 3)(x - 3)}{(4x + 3)(x - 3)} = \frac{(2x + 1)(2x - 7)}{18.6x^2 - 7x - 30} = \frac{(3x + 4)(2x - 5)}{(3x + 4)(2x - 5)} = \frac{(4x + 3)(3x - 4)}{1912x^2 - 38x - 18} = \frac{(4x + 3)(3x - 4)}{2020x^2 + 28x - 6} = \frac{(3x + 4)(2x - 5)}{212x^2 + 5x + 42} = \frac{(4x + 3)(3x - 4)}{1012x^2 - 38x - 18} = \frac{(4x + 3)(3x - 4)}{2020x^2 + 28x - 6} = \frac{(3x + 4)(2x - 5)}{212x^2 + 5x + 42} = \frac{(4x + 3)(3x - 4)}{1012x^2 - 38x - 18} = \frac{(4x + 3)(3x - 4)}{2020x^2 + 28x - 6} = \frac{(14x + 9)(3x + 2)}{212x^2 + 5x + 42} = \frac{(14x + 9)(3x + 2)}{22. The area of a rectangle is 3x^2 - 37x - 8. The widh is \frac{4x + 1}{2} The area of a rectangle is 3x^2 - 37x - 8. The widh is \frac{4x + 1}{2} The area of a rectangle is 3x^2 - 37x - 8. The widh is \frac{4x + 1}{2} The area of a rectangle is 3x^2 - 37x - 8. The widh is \frac{4x + 1}{2} The area of a rectangle is 3x^2 - 37x - 8. The widh is \frac{4x + 1}{2} The area of a rectangle is 3x^2 - 37x - 8. The widh is \frac{4x + 1}{2} The area of a rectangle is 3x^2 - 32x + 14. The second is \frac{3x + 4}{2} = \frac{1}{2} = \frac{1}{2}$	13. $10x^2 + 13x - 9$	14. $3x^2 + x - 4$	15. $5x^2 + 7x - 6$	13. 8x ² + 29x - 12	14. 11 <i>x</i> ⁻ + 25 <i>x</i> - 24	15. $9x^2 - 3x - 2$
(2x + 1)(2x - 1) (2x + 1)(2x - 1) (2x + 1)(2x - 1) (2x + 1)(2x - 1) (2x - 1)(3x - 4) (15x + 3)(1x + 9) -1(5x + 1)(3x - 4) -1(5x + 2)(4x - 3) 22. The area of a rectangle is $2x^2 + 1x + 3$. The length is $2x + 3$. The width is $-4x + 1$ Thick algobra 22. The area of a rectangle is $2x^2 + 1x + 3$. The length is $2x + 3$. The width is $-4x + 1$ Calce C Reteach Safe - 21 -2(1x - 2)(2x - 3) (2x + 1)(3x - 4) -1(5x + 6)(4x - 1) -1(5x + 6)(4x - 1) -1(5x + 3)(1x + 3) -1(5x + 3)(2x - 3) -1(5x + 3)(2x - 3) -1(5x + 3)(2x - 3) -1(5x + 3)(2x - 3) -1(5x + 3)(2x - 3) -1(5x + 3)(2x - 3) -1(2x + 7)(3x - 4) -1(5x + 3)(4x + 9) -1(5x + 3)(2x - 3) -1(5x + 3)(4x + 9) -1(5x + 3)(2x - 3) -1(5x + 3)(4x + 9) -1(5						
19. $-5x^2 - 48x - 27$ 20. $-6x^2 + 11x - 4$ 21. $-20x^2 + 7x + 6$ $-1(5x^2 + 48x + 27)$ $-1(5x + 3)(1x + 9)$ $-1(2x - 1)(3x - 4)$ $-1(5x + 2)(4x - 3)$ 22. The area of a rectangle is $8x^2 + 14x + 3$. The length is $2x + 3$. The width is $\frac{4x + 1}{4x^2 + 14x^2}$ The length is $4x + 1$. What is the width? $5x - 8$ 23. The area of a rectangle is $8x^2 + 14x + 3$. The length is $2x + 3$. The width is $\frac{4x + 1}{4x^2 + 14x^2}$ The length is $4x + 1$. What is the width? $5x - 8$ 24. The area of a rectangle is $8x^2 + 14x + 3$. The length is $2x + 3$. The width is $\frac{4x + 1}{4x^2 + 14x^2 + 3x^2 + 9}$ $16x^2 + 16x + 5$ $5x - 8$ 25. The area of a rectangle is $8x^2 + 14x + 3$. The length is $4x + 1$. What is the width? 25. The area of a rectangle is $8x^2 - 12x + 3$ 10. $6x^2 - 17x - 7$ 2. $14x^2 - 27x + 9$ 3. $16x^2 + 16x + 5$ Colspan="2">Reteach ($3d + 7)(2d + 1$) ($Tx - 3)(2x - 3$) ($2x + 7)(3x - 4$) 2. $1x^2 - 27x + 9$ 3. $16x^2 + 16x + 5$ ($3d + 7)(2d + 1$) ($Tx - 5)(2x - 3$) ($3d + 7)(2d + 1$) ($Tx - 5)(2x - 3$) 2. $12x^2 - 5x + 2$ 8. $6x^2 + 13x - 23$ <td< td=""><td></td><td></td><td>(3x+4)(2x-5)</td><td></td><td></td><td></td></td<>			(3x+4)(2x-5)			
$\frac{-1(5x^{2} + 48x + 27)}{-1(5x + 3)(1x + 9)} - 1(2x - 1)(3x - 4) - 1(5x + 2)(4x - 3)}$ 22. The area of a rectangle is $8x^{2} + 14x + 3$. The length is $2x + 3$. The width is $\frac{4x + 1}{4x^{2}}$. The area of a rectangle is $8x^{2} + 14x + 3$. The length is $2x + 3$. The width is $\frac{4x + 1}{4x^{2}}$. The area of a rectangle is $8x^{2} + 14x + 3$. The length is $4x + 1$. What is the width? 23. The area of a rectangle is $8x^{2} + 14x + 3$. The length is $2x + 3$. The width is $\frac{4x + 1}{4x^{2}}$. The area of a rectangle is $8x^{2} + 14x + 3$. The length is $4x + 1$. What is the width? 24. The coloring $ax^{2} + bx + c$ Factor each thromal. 1. $6d^{2} + 17d + 7$ 2. $14x^{2} - 27x + 9$ 3. $16c^{2} + 18c + 5$ 4. $20b^{2} + 21b - 5$ 5. $12m^{2} - 40m + 25$ 6. $6x^{2} + 13x - 28$ $\frac{(4b + 5)(5b - 1)}{(7 - 20t^{2} - 57x - 27)}$ 6. $6x^{2} + 13x - 28$ $\frac{-1(5x + 3)(4x + 9)}{(7 - 20t^{2} - 57x - 27)}$ 6. $4t^{2} + 211 - 49$ $\frac{-1(5x + 3)(4x + 9)}{(7 - 3)}$ $\frac{(15n - 5)(2m - 5)}{(15 - 68a + 32)}$ 12. $-4x^{2} - 8x + 45$ 13. $6x^{2} + 91x - 150$ 14. $4x^{2} + 13x + 10$ 15. $9k^{2} - 18k + 8$ $\frac{-1(5x + 3)(4x + 9)}{(15 - 68a + 32)}$ 12. $-4x^{2} - 8k + 45$ 13. $6x^{2} + 91x - 150$ 14. $4x^{2} + 13x + 10$ 15. $9k^{2} - 18k + 8$ $\frac{-1(13w - 25)(w - 1)}{(15 - 28)(2x - 3)}$ 15. $9k^{2} - 18k + 8$ $\frac{-1(13w - 25)(w - 1)}{(15 - 28)(2x - 3)}$ 16. $18p^{2} + 9p - 14$ 16. $18p^{2} + 9p - 14$ 17. $21x^{2} - 16x - 16$ 18. $18p^{2} + 9p - 14$ 18. $18p^{2} + 13x - 15$ 19. $13w^{2} + 13x + 21$ 10. $44x^{2} + 13x + 10$ 11. $14x^{2} + 15x^{2} + 13x + 12$ 11. $14x^{2} + 15x^{2} + 13x^{2} + 14x^{2} + 13x^{2} + 14x^{2} + 14x^{2} + 15x^{2} + 12x^{2} + 14x^{2} + 14x^{2} + 15x^{2} + 12x^{2} + 14x^{2} + 15x^{2} + 12x^{2} + 14x^{2} + 15x^{2} + 12x^{2} + 1$		-	31 $20x^2 + 7x + 6$			
$\frac{-1(5x + 3\chi(x + 9))}{12} - \frac{-1(2x - 1)(3x - 4)}{12} - \frac{-1(5x + 2)(4x - 3)}{12} - \frac{-1(5x + 2)(4x - 3)}{12} = \frac{-1(5x + 3)(x + 9)}{12} - \frac{-1(5x + 3)(2x - 3)}{12} = \frac{-1(5x + 3)(2x - 3)}{12} = \frac{-1(2x - 3)(2x - 3)}{12} = \frac{-1(2x - 3)(2x - 3)}{12} = \frac{-1(2x + 3)(2x - 5)}{12} = \frac{-1(2x + 3)(2x - 5)}{12} = \frac{-1(2x + 3)(2x - 5)}{12} = \frac{-1(3x - 28)}{12} = \frac{-1(3x - 28)}{$			21. $-20x + 7x + 6$			$\frac{-1(2x+7)(x-b)}{x-b}$
Augment 102August2Market 1010Particle 210Particle 310Particle 310Particle 310Particle 310Particle 310Particle 310Particle 310Particle 310Particle 311Particle 311Particle 311Particle 311Particle 311Particle 311Particle 311Particle 311Particle 312Particle 312Particle 313Particle 314Particle 314Particle 315Particle 315Particle 315Particle 315Particle 315Particle 316Particle 316Particle 316Particle 317Particle 318Particle 3 <t< td=""><td><u>.</u></td><td></td><td>-1(5x+2)(4x-3)</td><td></td><td></td><td>5<i>x</i> - 8</td></t<>	<u>.</u>		-1(5x+2)(4x-3)			5 <i>x</i> - 8
The product of the sum is the second trinomial. 1.6 $d^2 + 17d + 7$ 2.1 $4x^2 - 27x + 9$ 3.1 $6c^2 + 18c + 5$ The construction $d^2 + 2x + 6$ A factor second trinomial. 1.6 $d^2 + 17d + 7$ 2.1 $4x^2 - 27x + 9$ 3.1 $6c^2 + 18c + 5$ A factor second trinomial. 2.4 $x^2 + 21b - 5$ 5. $12m^2 - 40m + 25$ 6. $cx^2 + 13x + 15$ Check you mansee. Check Check The data $T = 10^{-1} +$	22. The area of a rectangle is 8	$3x^2 + 14x + 3$. The length is $2x + 3x^2 + 14x + 3$.	+ 3. The width is $4x + 1$.			
EXAMPLE 7 Factoring $ax^2 + bx + c$ Factor and trinomial. 1. $6d^2 + 17d + 7$ 2. $14x^2 - 27x + 9$ 3. $16c^2 + 18c + 5$ ($3d + 7)(2d + 1)$ 4. $20b^2 + 21b - 5$ 5. $12m^2 - 40m + 25$ 6. $bx^2 + 13x - 28$ ($4b + 5)(5b - 1)$ 7. $-20x^2 - 57x - 27$ 8. $4t^2 + 21t - 49$ 9. $15t^2 + 37t + 18$ -1(5x + 3)(4x + 9) 10. $64h^2 - 28h - 15$ 11. $15s^2 - 688 + 32$ 12. $-4x^2 - 8x + 45$ 13. $6x^2 + 91x - 150$ 14. $4x^2 + 13x + 10$ 15. $9k^2 - 18k + 8$ ($3x + 50)(2x - 3)$ 14. $4x^2 + 13x - 16$ 18. $18p^2 + 9p - 14$ 16. $24n^2 + 17n - 22$ 17. $-13x^2 - 23$ ($12x + 5)(x + 6)$ 18. $18p^2 + 9p - 14$ 19. $-13w^2 + 38w - 25$ 20. $(12x + 5)(x + 6)$ 10. $64h^2 - 28h - 15$ 11. $15s^2 - 688 + 32$ 12. $-4x^2 - 8x + 45$ 13. $6x^2 + 91x - 150$ 14. $4x^2 + 13x + 10$ 15. $9k^2 - 18k + 8$ -1(13w - 25)(w - 1) 16. $24n^2 + 17n - 22$ 17. $21x^2 - 16x - 16$ 18. $18p^2 + 9p - 14$ 18. $18p^2 + 9p - 14$ 19. $-13w^2 + 38w - 25$ 20. $(12x + 5)(x + 6)$ 21. $12y^2 - 41y - 15$ 22. The area of a parallelogum is $32x^2 - 23x + 14$. Check your answer. 2x^2 + 11x + 15 C - x + 10) (x + 1) 19. $-13w^2 + 38w - 25$ 20. $(1x + 4)(3x - 4)$ 10. $(4x + 5)(x - 2)$ 21. $12y^2 - 41y - 15$ 22. The area of a parallelogum is $32x^2 - 23x - 15$. The base is $8x - 3$. What is the wight if the length is $3x + 6$ incheck? 2x - 9 inches 2x - 9 inches 2x - 9 inches	Copyright © by Holt, Rinehart and Winston. All rights reserved.	27	Holt Algebra 1	Copyright @ by Holt, Rinehart and Winston. All rights reserved.	28	Holt Algebra 1
1. $6d^2 + 17d + 7$ 2. $14x^2 - 27x + 9$ 3. $16c^2 + 18c + 5$ 1. $6d^2 + 17d + 7$ 2. $14x^2 - 27x + 9$ 3. $16c^2 + 18c + 5$ 1. $6d^2 + 17d + 7$ 2. $14x^2 - 27x + 9$ 3. $16c^2 + 18c + 5$ 1. $6d^2 + 17d + 7$ 2. $14x^2 - 27x + 9$ 3. $16c^2 + 18c + 5$ 1. $6d^2 + 21b - 5$ 5. $12m^2 - 40m + 25$ 6. $6x^2 + 13x - 28$ ($4b + 5)(5b - 1)$ ($6m - 5)(2m - 5)$ ($2x + 7)(3x - 4)$ Factor $2x^2 + 11x + 15$ Codet + (mer and under ander and under and under and under and under ander and under and un						
$\frac{(3d+7)(2d+1)}{4 \cdot 20b^{2} + 21b - 5} = \frac{(7x-3)(2x-3)}{5 \cdot 12m^{2} - 40m + 25} = \frac{(2c+1)(8c+5)}{6 \cdot 6x^{2} + 13x - 28}$ $\frac{(4b+5)(5b-1)}{7 \cdot -20x^{2} - 57x - 27} = \frac{(6m-5)(2m-5)}{8 \cdot 4t^{2} + 21t - 49} = \frac{(2x+7)(3x-4)}{15t^{2} + 37t^{2} + 18}$ $\frac{-1(5x+3)(4x+9)}{(1-5t^{2} - 38t^{2} - 28t^{2} - 15)} = \frac{(t+7)(4t-7)}{11 \cdot 15a^{2} - 68a + 32} = \frac{(5f+9)(3f+2)}{12 \cdot -4x^{2} - 8x + 45}$ $\frac{-1(5x+3)(4x+9)}{(16h+5)(4h-3)} = \frac{(1+7)(4t-7)}{(15a-8)(a-4)} = \frac{(5f+9)(3f+2)}{15 \cdot 8t^{2} - 18k + 8}$ $\frac{(3x+50)(2x-3)}{(x+3)(2x+5)} = \frac{(4x+5)(x+2)}{11 \cdot 3t^{2} - 16x - 16} = \frac{(3x-4)(3k-2)}{18 \cdot 18p^{2} + 9p - 14}$ $\frac{(3x+50)(2x-3)}{11 \cdot 3t^{2} - 16x - 16} = \frac{(3x+4)(3x-2)}{18 \cdot 18p^{2} + 9p - 14}$ $\frac{(3n+11)(3n-2)}{11 \cdot 3t^{2} - 16x - 16} = \frac{(3x+1)(4y-15)}{18 \cdot 18p^{2} + 9p - 14}$ $\frac{(x+2)(5x+2)}{11 \cdot 3t^{2} - 13x + 21} = \frac{(2x+3)(2x+4)}{11 \cdot 41 - 4x^{2} + 8x + 3}$ $\frac{(3x+4)(x+1)}{(2x-7)(x-3)} = \frac{(2x+3)(2x+1)}{(2x+3)(2x+1)}$		-bx+c				
$\frac{(4b+5)(5b-1)}{(720x^2-57x-27)} = \frac{(6m-5)(2m-5)}{8.4t^2+21t-49} = \frac{(2x+7)(3x-4)}{9.15t^2+37t+18}$ $\frac{-1(5x+3)(4x+9)}{11.15a^2-68a+32} = \frac{(t+7)(4t-7)}{11.15a^2-68a+32} = \frac{(5f+9)(3f+2)}{124x^2-8x+45}$ $\frac{(16h+5)(4h-3)}{13.6x^2+91x-150} = \frac{(15a-8)(a-4)}{14.4x^2+13x+10} = \frac{-1(2x+9)(2x-5)}{15.9k^2-18k+8}$ $\frac{(3x+50)(2x-3)}{15.24n^2+17n-22} = \frac{(4x+5)(x+2)}{17.21x^2-16x-16} = \frac{(3x-4)(3k-2)}{18.18p^2+9p-14}$ $\frac{(8n+11)(3n-2)}{1913w^2+38w-25} = \frac{(7x+4)(3x-4)}{20.12x^2+77x+30} = \frac{(6p+7)(3p-2)}{21.12y^2-41y-15}$ $\frac{(3x+4)(x+1)}{2x-9} = \frac{(2x-7)(x-3)}{12.2x^2-13x+21} = \frac{(2x+3)(2x+1)}{4.4x^2+8x+3}$ $\frac{(3x+4)(x+1)}{2.3x^2+7x+4} = \frac{(2x-7)(x-3)}{2.3x^2-13x+21} = \frac{(2x+3)(2x+1)}{4.4x^2+8x+3}$	Factor each trinomial.		3. $16c^2 + 18c + 5$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check	first find factors of <i>a</i> and <i>c</i> . Then be see if the sum is <i>b</i> . Ex your Factor $3x^2 - $	
$\frac{(4b+5)(5b-1)}{(2x^{2}-57x-27)} = \frac{(6m-5)(2m-5)}{8.4t^{2}+21t-49} = \frac{(2x+7)(3x-4)}{9.15t^{2}+37t+18}$ $\frac{11 and 2}{1and 2} \begin{bmatrix} 15 and 1 \\ 1-1-2:15=31 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 5 and 3 \\ 1-3+2-5=13 x \\ 1and 2 \\ 1$	Factor each trinomial. 1. $6d^2 + 17d + 7$	2. $14x^2 - 27x + 9$		When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Chec answer.	first find factors of <i>a</i> and <i>c</i> . Then b see if the sum is <i>b</i> . Ck your Factor $3x^2 - answer.$	23x + 14. Check your
$\frac{-1(3x + 3)(4x + 3)}{(16 + 5)(4h - 3)} = \frac{(1 + 1)(41 - 1)}{(15a - 8)(a - 4)} = \frac{(3t + 3)(3t + 2)}{(12 - 4x^2 - 8x + 45)}$ $\frac{(16h + 5)(4h - 3)}{(13 - 2)} = \frac{(15a - 8)(a - 4)}{(14 + 4x^2 + 13x + 10)} = \frac{-1(2x + 9)(2x - 5)}{15 + 9k^2 - 18k + 8}$ $\frac{(3x + 50)(2x - 3)}{(16 + 2^{2} + 11x - 150)} = \frac{(4x + 5)(x + 2)}{(14 + 4x^2 + 13x + 10)} = \frac{(3k - 4)(3k - 2)}{15 + 9k^2 - 18k + 8}$ $\frac{(3x + 50)(2x - 3)}{(12 + x^2 + 11x + 15\sqrt{x^2 - 18k + 8})} = \frac{(4x + 5)(x + 2)}{(15 - 4x^2 - 16x - 16)} = \frac{(3k - 4)(3k - 2)}{18 + 18p^2 + 9p - 14}$ $\frac{(8n + 11)(3n - 2)}{(13 - 2)} = \frac{(7x + 4)(3x - 4)}{(12x + 5)(x + 6)} = \frac{(6p + 7)(3p - 2)}{(12x^2 + 77x + 30)} = \frac{(6p + 7)(3p - 2)}{21 + 12y^2 - 41y - 15}$ $\frac{(113w - 25)(w - 1)}{(12w - 5)(w - 1)} = \frac{(12x + 5)(x + 6)}{(12x + 5)(x + 6)} = \frac{(3y + 1)(4y - 15)}{(3y + 1)(4y - 15)}$ $\frac{(3x + 4)(x + 1)}{(2x - 7)(x - 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 3)(2x + 1)}$ $\frac{(3x + 4)(x + 1)}{(2x - 7)(x - 3)} = \frac{(2x + 3)(2x + 1)}{(2x + 3)(2x + 1)}$	Factor each trinomial. 1. $6d^2 + 17d + 7$ <u>(3d + 7)(2d + 1)</u>	2. $14x^2 - 27x + 9$ (7x - 3)(2x - 3)	(2c+1)(8c+5)	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (2x^2 + 11x + 15)$ Factors Factors Outer - of 2 of 15 Outer -	first find factors of <i>a</i> and <i>c</i> . Ther to see if the sum is <i>b</i> . ck your Factor $3x^2 - \frac{1}{answer}$. ((x +)) $3x^2 - 23x - \frac{1}{answer}$. ((x +)) $3x^2 - 23x - \frac{1}{answer}$.	23 x + 14. Check your + 14 = ($(x + u)$)($(x + u)$) ors Outer + Inner
10. $64h^2 - 28h - 15$ 11. $15a^2 - 68a + 32$ 12. $-4x^2 - 8x + 45$ Check: (x + 3)(2x - 5) = 2x^2 + 5x + 6x + 15 = 2x^2 + 11x + 15 J (x - 7)(3x - 2) = 3x^2 - 2x - 21x + 14 = 3x^2 - 23x + 14 J $(15h + 5)(4h - 3)$ $(15a - 8)(a - 4)$ $-1(2x + 9)(2x - 5)$ 13. $6x^2 + 91x - 150$ 14. $4x^2 + 13x + 10$ 15. $9k^2 - 18k + 8$ $(3x + 50)(2x - 3)$ $(4x + 5)(x + 2)$ $(3k - 4)(3k - 2)$ 17. $21x^2 - 16x - 16$ 18. $18p^2 + 9p - 14$ $18p^2 + 9p - 14$ $(8n + 11)(3n - 2)$ $(7x + 4)(3x - 4)$ $(6p + 7)(3p - 2)$ $(3y + 1)(4y - 15)$ $(3y + 1)(4y - 15)$ 19. $-13w^2 + 38w - 25$ $(12x + 5)(x + 6)$ $(3y + 1)(4y - 15)$ $(3y + 1)(4y - 15)$ $(3y + 1)(4y - 15)$ 22. The area of a parallelogram is $32x^2 + 28x - 15$. The base is $8x - 3$. What is the height? $4x + 5$ $(3x + 4)(x + 1)$ $(2x - 7)(x - 3)$ $(2x + 3)(2x + 1)$ 23. The area of a towell is $6x^2 - 11x - 72$ inches. What is the width if the length is $3x + 8$ inches? $2x - 9$ inches $(3x + 4)(x + 1)$ $(2x - 7)(x - 3)$ $(2x + 3)(2x + 1)$	Factor each trinomial. 1. $6d^2 + 17d + 7$ (3d + 7)(2d + 1) 4. $20b^2 + 21b - 5$ (4b + 5)(5b - 1)	2. $14x^2 - 27x + 9$ 5. $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ $\frac{(6m - 5)(2m - 5)}{12m^2 - 5}$	$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (1x + 1)^2$ Factors Factors Outer of 2 of 15 Outer Tand 2 T and 15 $1 \cdot 15 + 2 \cdot 1$ $1 \cdot 16 + 2 \cdot 15$ $1 \cdot 36 + 2 \cdot 5 = 3$	first find factors of a and c. There to see if the sum is b. b your b Factor 3x² – answer . c your c answer . c 	23x + 14. Check your + 14 = $(x + y)(x + y)$ ors
Image: Second structure Image: Second structure </td <td>Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$</td> <td>2. $14x^2 - 27x + 9$ $\frac{(7x - 3)(2x - 3)}{5. 12m^2 - 40m + 25}$ $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$</td> <td>$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$ $\frac{(2x+7)(3x-4)}{9.15t^2+37t+18}$</td> <td>When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (1x + 1)$ Factors Factors Outer of 2 of 15 $1.15 + 2.15$ 1 and 2 1 and 15 $1.15 + 2.15$ 1 and 2 5 and 3 $1.3 + 2.5 = 1$ and 2 3 and 5 $1.5 + 2.3 = 1$ (x + 3)(2x + 5)</td> <td>first find factors of a and c. There is see if the sum is b. Sk your</td> <td>23x + 14. Check your + 14 = $(x + 1)(x + 1)$ ors </td>	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$	2. $14x^2 - 27x + 9$ $\frac{(7x - 3)(2x - 3)}{5. 12m^2 - 40m + 25}$ $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$	$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$ $\frac{(2x+7)(3x-4)}{9.15t^2+37t+18}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (1x + 1)$ Factors Factors Outer of 2 of 15 $1.15 + 2.15$ 1 and 2 1 and 15 $1.15 + 2.15$ 1 and 2 5 and 3 $1.3 + 2.5 = 1$ and 2 3 and 5 $1.5 + 2.3 = 1$ (x + 3)(2x + 5)	first find factors of a and c. There is see if the sum is b. Sk your	23x + 14. Check your + 14 = $(x + 1)(x + 1)$ ors
13. $6x^2 + 91x - 150$ 14. $4x^2 + 13x + 10$ 15. $9k^2 - 18k + 8$ $(3x + 50)(2x - 3)$ $(4x + 5)(x + 2)$ $(3k - 4)(3k - 2)$ 16. $24n^2 + 17n - 22$ 17. $21x^2 - 16x - 16$ 18. $18p^2 + 9p - 14$ $(3n + 11)(3n - 2)$ $(7x + 4)(3x - 4)$ $(6p + 7)(3p - 2)$ $(1 - 13w^2 + 38w - 25)$ $(7x + 4)(3x - 4)$ $(6p + 7)(3p - 2)$ $(1 - 14)(3w - 25)(w - 1)$ $(12x + 5)(x + 6)$ $(3y + 1)(4y - 15)$ 22. The area of a parallelogram is $32x^2 + 28x - 15$. The base is $8x - 3$. What is the height? $4x + 5$ 23. The area of a towel is $6x^2 - 11x - 72$ inches. What is the width if the length is $3x + 8$ inches? $2x - 9$ inches $(3x + 4)(x + 1)$ $(2x - 7)(x - 3)$ $(2x + 3)(2x + 1)$	Factor each trinomial. 1. $6d^2 + 17d + 7$ (3d + 7)(2d + 1) 4. $20b^2 + 21b - 5$ (4b + 5)(5b - 1) 7. $-20x^2 - 57x - 27$ -1(5x + 3)(4x + 9)	2. $14x^2 - 27x + 9$ $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$ $\frac{(t + 7)(4t - 7)}{4t - 7}$	$\frac{(2c+1)(8c+5)}{6.\ 6x^2+13x-28}$ 9. $\frac{(2x+7)(3x-4)}{15f^2+37f+18}$ $(5f+9)(3f+2)$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (x + 1)^2$ Factors Factors of 2 of 15 Outer - of 2 fand 2 1 and 15 1 $\cdot 15 + 2 \cdot 13$ 1 and 2 15 and 1 $\cdot 15 + 2 \cdot 35$ 1 and 2 13 and 5 $\cdot 15 + 2 \cdot 35$ 1 and 2 13 and 5 $\cdot 15 + 2 \cdot 35$ 1 and 2 13 and 5 $\cdot 15 + 2 \cdot 35$ 1 and 2 13 and 5 $\cdot 15 + 2 \cdot 35$ Check: $(x + 3)(2x + 5) = 2x^2 + 5x$	first find factors of a and c. There is see if the sum is b. the see if the sum is b. the see if the sum is b. the sum is b. The sum is b. The sum is b. The sum is b. The sum is	23x + 14. Check your + 14 = $(x + y)(x + y)$ ors
$\frac{(3x+50)(2x-3)}{(2x-3)} = \frac{(4x+5)(x+2)}{17.21x^{2}-16x-16} = \frac{(3k-4)(3k-2)}{18.18p^{2}+9p-14} = \frac{(3k-4)(3k-2)}{18.18p^{2}+9p-14} = \frac{1}{1} =$	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ 5. $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$ -1(5x + 3)(4x + 9) 10. $64h^2 - 28h - 15$	2. $14x^2 - 27x + 9$ 5. $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 6. $\frac{(6m - 5)(2m - 5)}{12m^2 - 40m + 25}$ 7. $\frac{(6m - 5)(2m - 5)}{11m}$ 8. $4t^2 + 21t - 49$ 11. $15a^2 - 68a + 32$	$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$ 9. $\frac{(2x+7)(3x-4)}{15f^2+37f+18}$ 12. $-4x^2-8x+45$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (1x + 1)$ Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Factors Factors Outer 1x + 15 = (1x + 1) Factors Outer 1x +	first find factors of a and c. There is see if the sum is b. bx your $\begin{array}{c} Factor 3x^{2} - answer. \\ answer. \\ 3x^{2} - 23x - bno \\ 1x^{2} - 23x - bno$	23x + 14. Check your + 14 = $(x + i)(x + i)$ ors
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ 5. $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$ 6. $\frac{-1(5x + 3)(4x + 9)}{10. 64h^2 - 28h - 15}$ 10. $64h^2 - 28h - 15$	2. $14x^2 - 27x + 9$ 5. $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 8. $\frac{(6m - 5)(2m - 5)}{4t^2 + 21t - 49}$ 11. $\frac{(t + 7)(4t - 7)}{15a^2 - 68a + 32}$ $\frac{(15a - 8)(a - 4)}{4t^2 - 68a + 32}$	$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$ 9. $\frac{(2x+7)(3x-4)}{15t^2+37t+18}$ 12. $\frac{(5f+9)(3f+2)}{-4x^2-8x+45}$ $-1(2x+9)(2x-5)$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (x + x + 1)$ Factors Factors 0 + 15 of 15 1 + 15 + 2 + 12 1 + 15 + 2 + 12 1 + 15 + 2 + 12 1 + 12 + 15 + 2 + 12 1 + 2 + 15 + 2 + 12 1 + 2 + 15 + 2 + 12 $(x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fill	first find factors of a and c. There is see if the sum is b. is kyour Factor $3x^2 - answer.$ i) (ii) $x + answer.$ ii) $3x^2 - 23x - answer.$ iii) $3x^2 - answer.$ iii) $3x^$	23x + 14. Check your + 14 = $(x + i)(x + i)$ ors
$\frac{(8n + 11)(3n - 2)}{(9n + 12)(3n - 2)} = \frac{(7x + 4)(3x - 4)}{(7x + 4)(3x - 4)} = \frac{(6p + 7)(3p - 2)}{(6p + 7)(3p - 2)}$ Factor each trinomial. 21. $12y^2 - 41y - 15$ $\frac{-1(13w - 25)(w - 1)}{(12x + 5)(x + 6)} = \frac{(3y + 1)(4y - 15)}{(3y + 1)(4y - 15)}$ 22. The area of a parallelogram is $32x^2 + 28x - 15$. The base is $8x - 3$. What is the height? 23. The area of a towel is $6x^2 - 11x - 72$ inches. What is the width if the length is $3x + 8$ inches? $\frac{2x - 9$ inches}	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ 5. $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$ 6. $\frac{-1(5x + 3)(4x + 9)}{10. 64h^2 - 28h - 15}$ 13. $\frac{(16h + 5)(4h - 3)}{6x^2 + 91x - 150}$ 13. $\frac{(3x + 50)(2x - 3)}{2}$	2. $14x^2 - 27x + 9$ $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 5. $12m^2 - 40m + 25$ $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$ 11. $15a^2 - 68a + 32$ $\frac{(15a - 8)(a - 4)}{14. 4x^2 + 13x + 10}$ 14. $4x^2 + 13x + 10$	$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$ 9. $\frac{(2x+7)(3x-4)}{15f^2+37f+18}$ 12. $-4x^2-8x+45$ 15. $\frac{-1(2x+9)(2x-5)}{9k^2-18k+8}$ 15. $\frac{(3k-4)(3k-2)}{2k^2-8k+8}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = ($ $x + $ $2x^2 + 11x + 15 = ($ $x + $ FactorsFactors of 151 and 21 and 151 and 21 and 151 and 21 and 21 and 23 and 51 $(x + 3)(2x + 5)$ Check: $(x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fillFactorsFactors1 and 51 and 51 and 51 and 5	first find factors of a and c. There is see if the sum is b. the see if the sum is b. the see if the sum is b. the sum is b. The sum is b. The sum is b. The sum is b. The sum is	23x + 14. Check your + 14 = $(x + i)(x + i)$ ors
22. The area of a parallelogram is $32x^2 + 28x - 15$. The base is $8x - 3$. What is the height? $4x + 5$ 23. The area of a towel is $6x^2 - 11x - 72$ inches. What is the width if the length is $3x + 8$ inches? $2x - 9$ inches $(3x + 4)(x + 1)$ $(2x - 7)(x - 3)$ $(2x + 3)(2x + 1)$	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ 5. $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$ 6. $\frac{-1(5x + 3)(4x + 9)}{10. 64h^2 - 28h - 15}$ 10. $64h^2 - 28h - 15$ 11. $6x^2 + 91x - 150$ 12. $\frac{(3x + 50)(2x - 3)}{16. 24h^2 + 17h - 22}$	2. $14x^2 - 27x + 9$ 5. $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 6. $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$ 7. $\frac{(t + 7)(4t - 7)}{11. 15a^2 - 68a + 32}$ 7. $\frac{(15a - 8)(a - 4)}{14. 4x^2 + 13x + 10}$ 7. $\frac{(4x + 5)(x + 2)}{17. 21x^2 - 16x - 16}$	$\frac{(2c+1)(8c+5)}{6.6x^2+13x-28}$ $\frac{(2x+7)(3x-4)}{9.15t^2+37t+18}$ $\frac{(5f+9)(3f+2)}{124x^2-8x+45}$ $\frac{-1(2x+9)(2x-5)}{15.9k^2-18k+8}$ $\frac{(3k-4)(3k-2)}{18.18p^2+9p-14}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = ($ x + Factors Factors Outer of 2 of 15 Outer fand 2 1 and 15 $1 \cdot 15 + 2 \cdot 15$ 1 and 2 5 and 3 $1 \cdot 15 + 2 \cdot 15$ 1 and 2 5 and 3 $1 \cdot 15 + 2 \cdot 15$ 1 and 2 5 and 3 $1 \cdot 15 + 2 \cdot 15$ 1 and 2 5 and 3 $1 \cdot 15 + 2 \cdot 15$ 1 and 2 5 and 3 $1 \cdot 15 + 2 \cdot 15$ 1 and 2 3 and 5 $1 \cdot 5 + 2 \cdot 3 =$ $(x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fill Factors Factors 1 and 5 1 and 7 1 and 5 2 and 7 1 and 5 2 and 7 1 and 7 1 and 7 2 and	first find factors of a and c. There is see if the sum is b. b your Factor $3x^2 - answer.$ $= 10 (x + 1) 3x^2 - 23x - 10x^2 - 1$	23x + 14. Check your + 14 = $(x + i)(x + i)$ ors
The base is $8x - 3$. What is the height? $4x + 5$ 23. The area of a towel is $6x^2 - 11x - 72$ inches. What is the width if the length is $3x + 8$ inches? $2x - 9$ inches $(3x + 4)(x + 1)$ $(2x - 7)(x - 3)$ $(2x + 3)(2x + 1)$	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ 7. $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$ 10. $64h^2 - 28h - 15$ 11. $64h^2 - 28h - 15$ 13. $6x^2 + 91x - 150$ 14. $\frac{(3x + 50)(2x - 3)}{16. 24n^2 + 17n - 22}$ (8n + 11)(3n - 2)	2. $14x^2 - 27x + 9$ 5. $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 8. $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$ 11. $15a^2 - 68a + 32$ 14. $\frac{(15a - 8)(a - 4)}{4x^2 + 13x + 10}$ 15. $\frac{(4x + 5)(x + 2)}{17. 21x^2 - 16x - 16}$ $\frac{(7x + 4)(3x - 4)}{13x - 4}$	$\frac{(2c+1)(8c+5)}{6.6x^{2}+13x-28}$ $\frac{(2x+7)(3x-4)}{9.15t^{2}+37t+18}$ $\frac{(5f+9)(3f+2)}{124x^{2}-8x+45}$ $\frac{-1(2x+9)(2x-5)}{15.9k^{2}-18k+8}$ $\frac{(3k-4)(3k-2)}{18p^{2}+9p-14}$ $\frac{(6p+7)(3p-2)}{18p^{2}-18p$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = ($ x + Factors Factors Outer $1 and 2$ f and 15 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 15 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 3 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 5 $1 \cdot 5 + 2 \cdot 3 =$ $(x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fill Factors Factors 1 and 5 1 and 2 1 and 5 2 and 2 (x + 2)(5x + 2) Factor each trinomial.	first find factors of a and c. There is see if the sum is b. b your Factor $3x^2 - answer.$ = 17x $= 17x$ $= 31x$ $1 and 3$ $= 11x$ $1 and 3$ $= 14$ $= 17x$ $1 and 3$ $= 17x$ $(x - 7)(3x - Check:$ $(x - 7)(3x$	23x + 14. Check your + 14 = $(x + i)(x + i)$ ors 3 - 14 $(-14) + 3 \cdot (-1) = -17x$ bd - 1 $(-(-1) + 3 \cdot (-1) = -17x$ 1 - 2 $(-7) + 3 \cdot (-2) = -13x$ - 2 $(-7) + 3 \cdot (-2) = -13x$ - 2 $(-7) + 3 \cdot (-7) = -23x$ 2) 2) = $3x^2 - 2x - 21x + 14$ = $3x^2 - 23x + 14x$
23. The area of a towel is $6x^2 - 11x - 72$ inches. What is the width if the length is $3x + 8$ inches? $2x - 9$ inches $\frac{(3x + 4)(x + 1)}{(2x - 7)(x - 3)}$	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $20b^2 + 17d + 7$ 5. $\frac{(3d + 7)(2d + 1)}{(20b^2 + 21b - 5)}$ 7. $-20x^2 - 57x - 27$ $\frac{-1(5x + 3)(4x + 9)}{10.64h^2 - 28h - 15}$ 10. $\frac{(16h + 5)(4h - 3)}{13.6x^2 + 91x - 150}$ 13. $\frac{(3x + 50)(2x - 3)}{16.24n^2 + 17n - 22}$ 14. $\frac{(8n + 11)(3n - 2)}{1913w^2 + 38w - 25}$	2. $14x^2 - 27x + 9$ $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 5. $12m^2 - 40m + 25$ $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$ 11. $15a^2 - 68a + 32$ 12. $\frac{(15a - 8)(a - 4)}{14. 4x^2 + 13x + 10}$ 13. $\frac{(4x + 5)(x + 2)}{17. 21x^2 - 16x - 16}$ 14. $\frac{(7x + 4)(3x - 4)}{12x^2 + 77x + 30}$	$\frac{(2c+1)(8c+5)}{6x^2+13x-28}$ 6. $\frac{(2x+7)(3x-4)}{9x^2+37t^2+18}$ 9. $\frac{(5f+9)(3f+2)}{12x^2-8x+45}$ 12. $\frac{-1(2x+9)(2x-5)}{9x^2-18k+8}$ 15. $\frac{-1(2x+9)(2x-5)}{9k^2-18k+8}$ 18. $\frac{(3k-4)(3k-2)}{18k^2+9p-14}$ 21. $\frac{(6p+7)(3p-2)}{18k^2-41y-15}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = ($ x + Factors Factors Outer $1 and 2$ f and 15 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 15 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 3 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 5 $1 \cdot 5 + 2 \cdot 3 =$ $(x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fill Factors Factors 1 and 5 1 and 2 1 and 5 2 and 2 (x + 2)(5x + 2) Factor each trinomial.	first find factors of a and c. There is see if the sum is b. bx your = 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1	23x + 14. Check your + 14 = $(x + 1)(x + 1)$ ors 3 - 14 $(-14) + 3 \cdot (-1) = -17x$ bd - 1 $(-(-14) + 3 \cdot (-1) = -17x$ 1 - 2 $(-7) + 3 \cdot (-2) = -13x$ - 2 $(-7) + 3 \cdot (-7) = -23x$ 2) 2) = $3x^2 - 2x - 21x + 14$ = $3x^2 - 23x + 14x$
Copyright 0 by Holt, Rinshart and Winston. 29 Holt Algebra 1 Copyright 0 by Holt, Rinshart and Winston. 30 Holt Algebra 1	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $\frac{(3d + 7)(2d + 1)}{20b^2 + 21b - 5}$ 5. $\frac{(4b + 5)(5b - 1)}{720x^2 - 57x - 27}$ 7. $-20x^2 - 57x - 27$ 10. $64h^2 - 28h - 15$ 13. $6x^2 + 91x - 150$ 14. $\frac{(16h + 5)(4h - 3)}{6x^2 + 91x - 150}$ 15. $\frac{(3x + 50)(2x - 3)}{16. 24n^2 + 17n - 22}$ 16. $\frac{(8n + 11)(3n - 2)}{1913w^2 + 38w - 25}$ 17. $-1(13w - 25)(w - 1)$ 18. 24. The area of a parallelogram	2. $14x^2 - 27x + 9$ 5. $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 8. $\frac{(6m - 5)(2m - 5)}{8. 4t^2 + 21t - 49}$ 11. $\frac{(t + 7)(4t - 7)}{11. 15a^2 - 68a + 32}$ 14. $\frac{(15a - 8)(a - 4)}{4x^2 + 13x + 10}$ 15. $\frac{(4x + 5)(x + 2)}{17. 21x^2 - 16x - 16}$ 16. $\frac{(7x + 4)(3x - 4)}{12x^2 + 77x + 30}$ 17. $\frac{(12x + 5)(x + 6)}{15. 32x^2 + 28x - 15.}$	$\frac{(2c+1)(8c+5)}{6.6x^{2}+13x-28}$ $\frac{(2x+7)(3x-4)}{9.15t^{2}+37t+18}$ $\frac{(5f+9)(3f+2)}{124x^{2}-8x+45}$ $\frac{-1(2x+9)(2x-5)}{15.9k^{2}-18k+8}$ $\frac{(3k-4)(3k-2)}{18.18p^{2}+9p-14}$ $\frac{(6p+7)(3p-2)}{12.12y^{2}-41y-15}$ $\frac{(3y+1)(4y-15)}{(3y+1)(4y-15)}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = ($ x + Factors Factors Outer $1 and 2$ f and 15 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 15 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 3 $1 \cdot 15 + 2 \cdot 15$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 3 $1 \cdot 5 + 2 \cdot 5$ $1 and 2$ f and 5 $1 \cdot 5 + 2 \cdot 3 =$ $(x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fill Factors Factors 1 and 5 1 and 2 1 and 5 2 and 2 (x + 2)(5x + 2) Factor each trinomial.	first find factors of a and c. There is see if the sum is b. bx your = 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1	23x + 14. Check your + 14 = $(x + i)(x + i)$ ors 3 - 14 $(-14) + 3 \cdot (-1) = -17x$ bd - 1 $(-(-1) + 3 \cdot (-1) = -17x$ 1 - 2 $(-7) + 3 \cdot (-2) = -13x$ - 2 $(-7) + 3 \cdot (-2) = -13x$ - 2 $(-7) + 3 \cdot (-7) = -23x$ 2) 2) = $3x^2 - 2x - 21x + 14$ = $3x^2 - 23x + 14x$
	Factor each trinomial. 1. $6d^2 + 17d + 7$ 4. $20b^2 + 17d + 7$ 5. $\frac{(3d + 7)(2d + 1)}{4}$ 7. $-20x^2 - 57x - 27$ $\frac{-1(5x + 3)(4x + 9)}{10}$ 10. $64h^2 - 28h - 15$ $\frac{(16h + 5)(4h - 3)}{13}$ 13. $6x^2 + 91x - 150$ 16. $24n^2 + 17n - 22$ $\frac{(8n + 11)(3n - 2)}{19}$ 19. $-13w^2 + 38w - 25$ -1(13w - 25)(w - 1) 12. The area of a parallelogram The base is $8x - 3$. What is 23. The area of a towel is $6x^2$	2. $14x^2 - 27x + 9$ $\frac{(7x - 3)(2x - 3)}{12m^2 - 40m + 25}$ 3. $\frac{(6m - 5)(2m - 5)}{12m^2 - 40m + 25}$ 3. $\frac{(6m - 5)(2m - 5)}{11}$ 3. $\frac{(15a - 8)(a - 4)}{11}$ 3. $\frac{(15a - 8)(a - 4)}{14}$ 3. $\frac{(12a + 5)(x + 2)}{12x^2 + 77x + 30}$ 3. $\frac{(12x + 5)(x + 6)}{12x^2 + 28x - 15}$ 3. $\frac{(12x + 5)(x + 6)}{14x - 72}$ 3. $\frac{(12x - 72)(x + 72)(x + 6)}{14x - 72}$ 3. $(12x - 72)($	$\frac{(2c+1)(8c+5)}{6.6x^{2}+13x-28}$ $\frac{(2x+7)(3x-4)}{9.15t^{2}+37t+18}$ $\frac{(5f+9)(3f+2)}{124x^{2}-8x+45}$ $\frac{-1(2x+9)(2x-5)}{15.9k^{2}-18k+8}$ $\frac{(3k-4)(3k-2)}{18.18p^{2}+9p-14}$ $\frac{(6p+7)(3p-2)}{21.12y^{2}-41y-15}$ $\frac{(3y+1)(4y-15)}{4x+5}$	When factoring $ax^2 + bx + c$, of the inner and outer terms to Factor $2x^2 + 11x + 15$. Check answer. $2x^2 + 11x + 15 = (1 + x + 1)$ Factors Factors Outer of 2 of 15 Outer of 2 fand 2 1 and 15 1 $\cdot 15 + 2 \cdot 11$ 1 and 2 15 and 1 1 $\cdot 15 + 2 \cdot 11$ 1 and 2 5 and 3 1 $\cdot 15 + 2 \cdot 51$ 1 and 2 5 and 3 1 $\cdot 15 + 2 \cdot 51$ 1 and 2 3 and 5 1 $\cdot 5 + 2 \cdot 32$ ($x + 3)(2x + 5) = 2x^2 + 5x$ $= 2x^2 + 11x$ 1. Factor $5x^2 + 12x + 4$ by fill Factors Factors 1 and 5 2 and 2 1 and 5 2 and 2 (x + 2)(5x + 2) Factor each trinomial. 2. $3x^2 + 7x + 4$	first find factors of a and c. There is the sum is b. b see if the sum is b. b see if the sum is b. c see if the sum is b. c set of the sum is below. s set of	23x + 14. Check your + 14 = $(x + 1)(x + 1)$ ors 0uter + Inner $\frac{4}{1}$ $\frac{1}{1} \cdot (-14) + 3 \cdot (-1) = -17x$ $\frac{1}{1} \cdot (-1) + 3 \cdot (-14) = -42x$ $\frac{1}{1} \cdot (-1) + 3 \cdot (-2) = -13x$ $\frac{1}{2} - 2x + 14 - 23x + 14x$ 2) 2) = $3x^2 - 2x - 21x + 14$ $= 3x^2 - 23x + 14x^2$ 4. $4x^2 + 8x + 3$

LESSON Reteach		LESSON Challenge	
8-4 Factoring $ax^2 + bx + c$ (8-4 Finding Factors & Synthetic division is a quick way	by Synthetic Division to divide a polynomial by a binomial in the form $x - a$
When <i>c</i> is negative, one factor of <i>c</i> is positive factors when you find the factors that work.	e and one is negative. You can stop checking	yielding another factor of the polyr	
Factor $2x^2 + 7x - 15$. Check your answer		$(x - 5)$ is a factor of $2x^2 - 3x - 3$	35. Use synthetic division to find the other factor.
$2x^{2} + 7x - 15 = (x + y)(x + y)$ Factors of 2 Factors of -15 Outer + Inn	per	$x = 5$ $2x^2 - 3x - 35$	Step 1: Write the coefficients of the polynomial (in standard form). Write <i>a</i> in a box to the left. Draw a line
1 and 2 -3 and 5 1 · 5 + 2 ·	(-3) = -1 x		below the coefficients. Step 2: Write the first coefficient below the line.
	(-5) = -7 x	5 2 -3 -35 10 35	Step 2: While the first coefficient below the fine. Step 3: Multiply that coefficient by the value of <i>a</i> and write
1 and 2 5 and -3 1 · (-3) +		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	the product under the next coefficient.
(x+5)(2x-3)	Check: $(x + 5)(2x - 3) = 2x^2 - 3x + 10x - 15$		Step 4: Add the numbers in the second column. Step 5: Repeat until all additions are completed.
	$= 2x^2 + 7x - 15$	The other factor is $2x + 7$.	If done correctly, the last sum will be zero. The numbers
When a is negative, factor out -1. Then fact	or as shown previously.		under the bar are the coefficients of the quotient, in decreasing degree.
Factor $-5x^2 + 28x + 12$. Check your answ	wer.		given. Use synthetic division to find the other factor.
$-5x^{2} + 28x + 12$ -1(5x ² - 28x - 12) = -1(-x + -)(-x	+	1. $4x^2 - 7x - 15$; $(x - 3)$	2. $3x^2 + 4x - 32$; $(x + 4)$
Factors of 5 Factors of -12 Outer + Inn	/	3 4 -7	-15 3 4 -32
	(-2) = -4 x	4 5	$\frac{15}{0}$ -12 32
1 and 5 6 and -2 1 · (-2) +	$5 \cdot 6 = 28 x$		J 3 -8 U
$1 \text{ and } 5 -6 \text{ and } 2 1 \cdot 2 + 5 \cdot ($	$\frac{-6) = -28 \checkmark}{Check:}$	(4 <i>x</i> + 5)	(3x - 8)
-1(x-6)(5x+2)	-1(x-6)(5x+2)	3. $6x^2 - 29x - 5$; $(x - 5)$	4. $8x^2 + 11x - 10; (x + 2)$
	$= -1(5x^{2} + 2x - 30x - 12)$ = -1(5x ² - 28x - 12)	(6 <i>x</i> + 1)	(8x-5)
	$= -5x^2 + 28x + 12$	Some polynomials have three factor	ors.
Factor each trinomial.		$(x - 2)$ is a factor of $x^3 - 3x^2 - 3x^2$	
5. $3x^2 - 7x - 20$ 6. $5x^2 + 34$	$4x - 7$ 7. $-2x^2 + 3x + 5$		24 Now factor $x^2 - x - 12$ using a method you know.
		2 -2 1 -1 -12	
		A polynomial and one factor is	0 The factors are: $(x - 2)(x + 3)(x - 4)$.
	1)(5. $x^3 + 7x^2 + 7x - 15$; $(x - 1)$	
(3x+5)(x-4) (5x-	$\frac{-1}{(x+7)} -\frac{-1(2x-5)(x+1)}{(x+1)}$	(x-1)(x+3)(x	(x+4)(2x-1)(x-5)
· · · · · ·	31 Holt Algebra 1	Copyright @ by Holt, Rinehart and Winston. All rights reserved.	32 Holt Algebra
Problem Solving 8-4 Factoring $ax^2 + bx + c$ Write the correct answer.		Reading Strate 8-4 Use a Model Most people factor trinomials of th	egies e form $ax^2 + bx + c$ using a sort of
Problem Solving B-4 Factoring $ax^2 + bx + c$	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where t is time in seconds. Factor the expression. Then find the height of the ball after 1 second.	Reading Strate Most people factor trinomials of th organized guess-and-check methor Factor the trinomial $4x^2 - 17x - 2x^2 - 17x - $	egies e form $ax^2 + bx + c$ using a sort of d. Look at the model below. 15 into two binomials. stands for First, Outer, Inner, Last. res a "plus" and a "minus" binomial. (• $x + $ • (• $x - $ •) of 4 are: 1 · 4 and 2 · 2. of 15 are: 1 · 15 and 3 · 5.
Problem Solving 34 Factoring $ax^2 + bx + c$ Write the correct answer. 1. A rectangular painting has an area of $(2x^2 + 8x + 6) \operatorname{cm}^2$. This length is $(2x+2) \operatorname{cm}$. Find the width of the painting.	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where t is time in seconds. Factor the expression. Then find the height of the ball after 1 second. -1(4t - 4)(4t + 1) or	Reading Strate 84 Use a Model Most people factor trinomials of th organized guess-and-check method Factor the trinomial $4x^2 - 17x - 12$ • Recall: The acronym FOLL • Signs: This trinomial require • Setup: $(F + L) (F - L) - 3$ • "First": The factorizations • "Last": The factorizations	egies e form $ax^2 + bx + c$ using a sort of od. Look at the model below. 15 into two binomials. stands for First, Outer, Inner, Last. res a "plus" and a "minus" binomial. ($x + 0 (0 x - 0)$) of 4 are: 1 · 4 and 2 · 2. of 15 are: 1 · 15 and 3 · 5. ss-and-check these values in the binomials.
LESSON Problem Solving 3-4 Factoring $ax^2 + bx + c$ Write the correct answer. 1. A rectangular painting has an area of $(2x^2+8x+6) \text{ cm}^2$. Its length is (2x+2) cm. Find the width of the	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where <i>t</i> is time in seconds. Factor the expression. Then find the height of the ball after 1 second. -1(4t - 4)(4t + 1) or $-4(4t + 1)(t - 1); 0 feet$ 4. A clothing store has a rectangular	Reading Strate 84 Use a Model Most people factor trinomials of th organized guess-and-check method Factor the trinomial $4x^2 - 17x - 12$ • Recall: The acronym FOLL • Signs: This trinomial require • Setup: $(F + L) (F - L) - 3$ • "First": The factorizations • "Last": The factorizations	egies e form $ax^2 + bx + c$ using a sort of d. Look at the model below. 15 into two binomials. stands for First, Outer, Inner, Last. res a "plus" and a "minus" binomial. (• $x + $ • (• $x - $ •) of 4 are: 1 • 4 and 2 • 2. of 15 are: 1 • 15 and 3 • 5.
Problem Solving 3. Factoring $ax^2 + bx + c$ Write the correct answer. 1. A rectangular painting has an area of $(2x^2 + 8x + 6) cm^2$. Its length is $(2x+2) cm$. Find the width of the painting. (x + 3) cm 3. Instructors led an exercise class from a raised rectangular platform at the front of the room. The width of the platform was $(3x - 1)$ feet and the area was $(9x^2 + 6x - 3)$ ft ² . Find the length of this platform. After the exercise studio is remodeled, the area of the platform will be $(9x^2 + 12x + 3)$ ft ² . By how many feet will the width of the platform change?	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where <i>t</i> is time in seconds. Factor the expression. Then find the height of the ball after 1 second. -1(4t - 4)(4t + 1) or $-4(4t + 1)(t - 1); 0 feet$ 4. A clothing store has a rectangular clearance section with a length that is twice the width <i>w</i> . During a sale, the section is expanded to an area of $(2w^2 + 19w + 35)$ ft ² . Find the amount of the increase in the length and width of the clearance section.	Reading Strate 84 Use a Model Most people factor trinomials of th organized guess-and-check method Factor the trinomial $4x^2 - 17x - 1^2$ • Recall: The acronym FOIL • Signs: This trinomial requival • Step: ($F + L) - 1^2$ • "First": The factorizations • "Last": The factorizations • "Last": The factorizations • "Duter" and "Inner": Gue The goal is to multiply the 'a a sum of -17. • ($\sqrt{x} + \sqrt{1} + \sqrt{x} + \sqrt$	egies e form $ax^2 + bx + c$ using a sort of d. Look at the model below. 15 into two binomials. stands for First, Outer, Inner, Last. res a "plus" and a "minus" binomial. ($ \bullet x + \bullet$)($ \bullet x - \bullet$) of 1 A are: 1 · 15 and 3 · 5. s-and-check these values in the binomials. 'Outer' terms and the "Inner' terms, and get) Outer + Inner -15 1 · -15 + 1 · 4 = -11 No -1 1 · -15 + 1 · 5 4 = 59 No -3 1 · -3 + 5 · 4 = -7 No -5 1 · -5 + 3 · 4 = 7 No -15 4 · -15 + 1 · 1 = -59 No
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Problem Solving 3. Factoring $ax^2 + bx + c$ Write the correct answer. 1. A rectangular painting has an area of $(2x^2 + 8x + 6) cm^2$. Its length is $(2x+2) cm$. Find the width of the painting. (x + 3) cm 3. Instructors led an exercise class from a raised rectangular platform at the front of the room. The width of the platform was $(3x - 1)$ feet and the area was $(9x^2 + 6x - 3)$ ft ² . Find the length of this platform. After the exercise studio is remodeled, the area of the platform will be $(9x^2 + 12x + 3)$ ft ² . By how many feet will the width of the platform change?	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where <i>t</i> is time in seconds. Factor the expression. Then find the height of the ball after 1 second. -1(4t - 4)(4t + 1) or $-4(4t + 1)(t - 1); 0 feet$ 4. A clothing store has a rectangular clearance section with a length that is twice the width <i>w</i> . During a sale, the section is expanded to an area of $(2w^2 + 19w + 35)$ ft ² . Find the amount of the increase in the length and width of the clearance section.	Reading Strate 84 Use a Model Most people factor trinomials of th organized guess-and-check method Factor the trinomial $4x^2 - 17x - 1^2$ • Recall: The acronym FOIL • Signs: This trinomial requi- • Signs: This trinomial requi- • "First": The factorizations • "Last": The factorizations • "Last": The factorizations • "Last": The factorizations • "Duter" and "Inner": Gue The goal is to multiply the a sum of -17. • $(\sqrt{x + \sqrt{1}})(\sqrt{x}, \sqrt{x})$ 1 1 4 4 1 5 4 1 3 4 4 1 5 1 4 3 1	egies e form $ax^2 + bx + c$ using a sort of d. Look at the model below. 15 into two binomials. stands for First, Outer, Inner, Last. res a "plus" and a "minus" binomial. ($a x + 0$)($a x - 0$) of 4 are: 1 · 4 and 2 · 2. of 15 are: 1 · 15 and 3 · 5. s-and-check these values in the binomials. 'Outer' terms and the "Inner' terms, and get
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Problem Solving 34 Factoring $ax^2 + bx + c$ Write the correct answer. 1. A rectangular painting has an area of $(2x^2+8x+6) \text{ cm}^2$. Its length is $(2x+2) \text{ cm}$. Find the width of the painting. ($x + 3$) cm 3. Instructors led an exercise class from a raised rectangular platform at the front of the room. The width of the platform was $(3x - 1)$ feet and the area was $(9x^2 + 6x - 3)$ ft ² . Find the length of this platform. After the exercise studio is remodeled, the area of the platform will be $(9x^2 + 12x + 3)$ ft ² . By how many feet will the width of the platform change? (3x + 3) ft; increase of 2 ft Select the best answer. 5. The area of a soccer field is $(24x^2 + 100x + 100) \text{ m}^2$. The width of the field is $(4x + 10) \text{ m}$. What is the length?	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where <i>t</i> is time in seconds. Factor the expression. Then find the height of the ball after 1 second. -1(4t - 4)(4t + 1) or $-4(4t + 1)(t - 1); 0 feet$ 4. A clothing store has a rectangular clearance section with a length that is twice the width <i>w</i> . During a sale, the section is expanded to an area of $(2w^2 + 19w + 35)$ ft ² . Find the amount of the increase in the length and width of the clearance section. length increased by 5 ft , width increased by 7 ft 6. A square parking lot has an area of $(4x^2 + 20x + 25)$ ft ² . What is the length of one side of the parking lot? (\mathbf{F}) $(2x + 5)$ ft H $(5x + 4)$ ft	Reading Strate B4 Use a Model Most people factor trinomials of th organized guess-and-check method Factor the trinomial $4x^2 - 17x - 1$ • Recall: The acronym FOIL • Signs: This trinomial requi • Setup: $(F + L)(F - L) \rightarrow$ • "First": The factorizations • "Last": The factorizations • "Uter" and "Inner": Gue The goal is to multiply the ' a sum of -17. • ($\sqrt{x + \sqrt{1}}$) \sqrt{x} 1 1 4 4 1 5 4 1 3 4 4 1 1 4 5 1 4 3 1 • Answer: $4x^2 - 17x - 15f$ Complete the following to guide 1. What are the factorizations of 3. What signs are needed in eace	egies e form $ax^2 + bx + c$ using a sort of d. Look at the model below. 15 into two binomials. 15 into two binomials. 15 into two binomials. 15 into two binomials. 15 into two binomials. 16 $axe: 1 + and 2 - 2$. 17 of 4 are: 1 - 4 and 2 - 2. 17 of 18 are: 1 - 15 and 3 - 5. 18 se-and-check these values in the binomials. 10 Uter + lnner 10 Uter + lnner 10 Uter + lnner 10 Uter + lnner 10 Uter + lnner 11 - 1 + 15 + 1 - 4 = -11 No 11 - 1 + 15 + 4 = 59 No 12 1 - 3 + 5 - 4 = -7 No 15 1 - 15 + 1 - 1 = -7 No 15 4 - 15 + 1 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 5 + 3 - 1 = -7 No 15 4 - 5 + 3 - 1 = -7 No 15 4 - 5 + 3 - 1 = -7 No 15 4 - 5 + 3 - 1 = -7 No 15 4 - 5 + 3 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 1 + 15 - 1 = 11 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 3 + 5 - 1 = -7 No 15 4 - 1 + 15 - 1 = 11 No 15 4 - 3 + 5 - 1 = -7 No 16 - 5 + 3 - 1 = -7 No 17 4 - 1 + 15 - 1 = 11 No 18 - 3 + 5 - 1 = -7 No 19 - 5 + 3 - 1 = -7 No 19 - 5 + 3 - 1 = -7 No 10 - 5 + 3 - 1 = -
Problem Solving 34 Factoring $ax^2 + bx + c$ Write the correct answer. 1. A rectangular painting has an area of $(2x^2 + 3x + 6)$ cm ² . Its length is (2x+2) cm. Find the width of the painting. ($x + 3$) cm 3. Instructors led an exercise class from a raised rectangular platform at the front of the room. The width of the platform was $(3x - 1)$ feet and the area was $(9x^2 + 6x - 3)$ ft ² . Find the length of this platform. After the exercise studio is remodeled, the area of the platform will be $(9x^2 + 12x + 3)$ ft ² . By how many feet will the width of the platform change? ($3x + 3$) ft; increase of 2 ft Select the best answer. 5. The area of a soccer field is $(24x^2 + 100x + 100)$ m ² . The width of the field is $(4x + 10)$ m. What is the	2. A ball is kicked straight up into the air. The height of the ball in feet is given by the expression $-16t^2 + 12t + 4$, where <i>t</i> is time in seconds. Factor the expression. Then find the height of the ball after 1 second. -1(4t - 4)(4t + 1) or $-4(4t + 1)(t - 1); 0 feet$ 4. A clothing store has a rectangular clearance section with a length that is twice the width <i>w</i> . During a sale, the section is expanded to an area of $(2w^2 + 19w + 35)$ ft ² . Find the amount of the increase in the length and width of the clearance section. length increased by 5 ft , width increased by 7 ft 6. A square parking lot has an area of $(4x^2 + 20x + 25)$ ft ² . What is the length of one side of the parking lot? (F) $(2x + 5)$ ft H $(5x + 4)$ ft G $(2x + 10)$ ft J $(5x + 2)$ ft	Reading Strate B4 Use a Model Most people factor trinomials of th organized guess-and-check method Factor the trinomial $4x^2 - 17x - 1$ • Recall: The acronym FOIL • Signs: This trinomial requival • Setup: $(F + L)(F - L) \rightarrow$ • "First": The factorizations • "Last": The factorizations • "Last": The factorizations • "Uter" and "Inner": Gue The goal is to multiply the 'a sum of -17. • ($\sqrt{x + \sqrt{1}}$) \sqrt{x} 1 1 4 4 1 5 4 1 3 4 4 1 1 4 5 1 4 3 1 • Answer: $4x^2 - 17x - 15f$ Complete the following to guide 1. What are the factorizations of 3. What signs are needed in eaco 4. Set up the binomials for factor	egies e form $ax^2 + bx + c$ using a sort of d. Look at the model below. 15 into two binomials. 15 into two binomials. 15 into two binomials. 15 into two binomials. 15 into two binomials. 16 into two binomials. 17 into the two binomials. 18 into the two binomials in the binomials. 19 Outer + linner 10 O
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