Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form A

Select the best answer.

1. Describe the solutions of $5 < n$ in words.

A all real numbers greater than 5

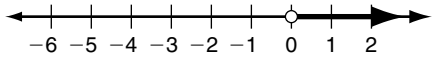
B all real numbers greater than or equal to 5

C all real numbers less than 5

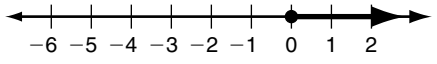
D all real numbers less than or equal to 5

2. Which graph represents $c \geq 0$?

A

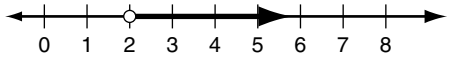


B

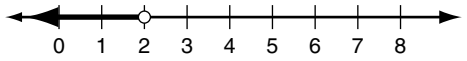


3. Which graph represents $b < 2$?

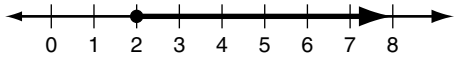
A



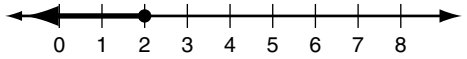
B



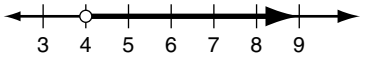
C



D



4. Which inequality is shown by the graph below?



A $x > 4$

B $x \geq 4$

C $x < 4$

D $x \leq 4$

5. Which inequality represents the situation "the temperature should be at least 40 degrees"?

A $t > 40$

B $t \geq 40$

6. Solve $x + 1 > 6$.

A $x > 5$

B $x > 7$

7. Solve $m - 8 \leq 14$.

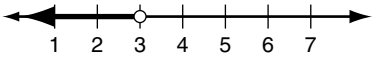
A $m \leq 6$

B $m \geq 6$

C $m \leq 22$

D $m \geq 22$

8. Which inequality has the solutions shown below?



A $p + 9 < 12$

B $p - 3 > 0$

9. During a sale, customers receive an extra discount if they spend \$200 or more. So far, Erin's purchases total \$135. Which inequality can be solved to show how many more dollars d she must spend to receive the extra discount?

A $135 + d > 200$

B $135 + d \geq 200$

10. Solve $-2y > 10$.

A $y < -5$

B $y > -5$

C $y < 5$

D $y > 5$

11. Solve $\frac{d}{3} \geq 6$.

A $d \geq 2$

B $d \geq 18$

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form A continued

12. Mrs. Nelson is buying folding chairs that are on sale for $10. If she has $50, which inequality can be solved to show the number of chairs c she can buy?

A $10c \leq 50$

B $10c \geq 50$

13. Solve $2(a + 8) > 18$.

A $a > 1$ **C** $a > 13$

B $a > 5$ **D** $a > 17$

14. Solve $-40 + 16 \leq 3m + 6$.

A $m \leq -10$ **C** $m \leq -6$

B $m \geq -10$ **D** $m \geq -6$

15. The average of Paula's two test scores must be 80 or more for her to get at least a B in the class. She got a 72 on her first test. What grades can she get on the second test to make at least a B in the class?

A at least 76 **C** at least 88

B at least 84 **D** at least 92

16. Solve $b + 1 > b + 6$.

A no solutions

B all real numbers

17. Solve $\frac{3}{6}x < \frac{1}{6}x + 10$.

A $x < 6$ **C** $x < 30$

B $x < 10$ **D** $x < 60$

18. Latisha is on page 30 of her book and reads 3 pages every night. Sal is on page 40 of the same book and reads 2 pages every night. How long will it take Latisha to be further in the book than Sal?

A 3 nights **C** 15 nights

B 11 nights **D** 71 nights

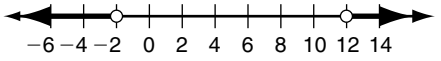
19. Solve the compound inequality $6 \leq x - 2 < 14$.

A $4 \leq x < 12$

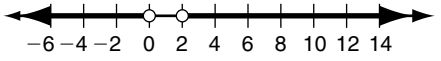
B $8 \leq x < 16$

20. Which graph represents the solutions of $p + 1 < -1$ OR $p - 5 > 7$?

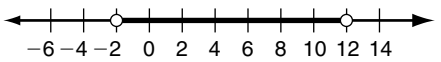
A



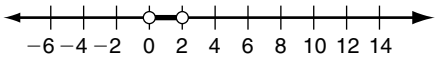
B



C



D



21. Which compound inequality is shown by the graph below?

A $x \geq 2$ AND $x \leq 8$

B $x \geq 2$ OR $x \leq 8$

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form B

Select the best answer.

1. Describe the solutions of $4 \leq n + 2$ in words.

A all real numbers greater than 4

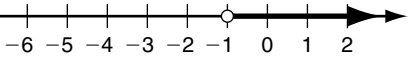
B all real numbers greater than or equal to 2

C all real numbers less than 2

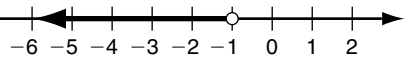
D all real numbers less than or equal to 4

2. Which graph represents $k < -1$?

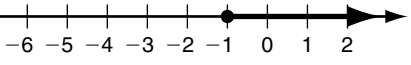
F



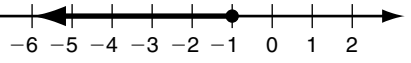
G



H

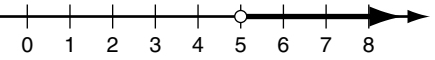


J

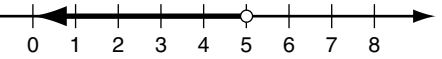


3. Which graph represents $b \geq 5$?

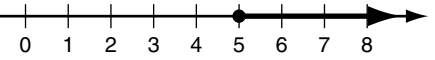
A



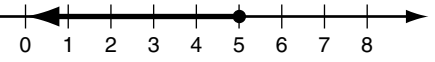
B



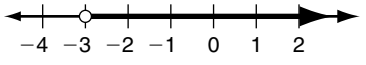
C



D



4. Which inequality is shown by the graph below?



F $x > -3$ **H** $x < -3$

G $x \geq -3$ **J** $x \leq -3$

5. Which inequality represents the situation "no more than 160 students are in the freshmen class"?

A $s > 160$ **C** $s < 160$

B $s \geq 160$ **D** $s \leq 160$

6. Solve $x + 7 > 2$.

F $x > -5$ **H** $x > 5$

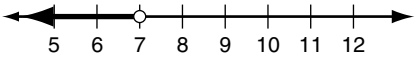
G $x < -5$ **J** $x < 5$

7. Solve $m - 1.5 \leq 4$.

A $m \leq -2.5$ **C** $m \leq 5.5$

B $m \geq -2.5$ **D** $m \geq 5.5$

8. Which inequality has the solutions shown below?



F $p \geq 7$ **H** $5 > p - 2$

G $5 < p - 2$ **J** $p \leq 7$

9. Mike is on a cross-country trip and wants to drive at least 450 miles per day. So far today, he has driven 175 miles. Which inequality can be solved to show the number of miles m that Mike must drive to meet his daily goal?

A $175 + m < 450$ **C** $175 + m > 450$

B $175 + m \leq 450$ **D** $175 + m \geq 450$

10. Solve $-28 < 4y$.

F $y < -7$ **H** $y < 7$

G $y > -7$ **J** $y > 7$

11. Solve $\frac{d}{2} \geq 8$.

A $d \geq 4$ **C** $d \geq 16$

B $d \leq 4$ **D** $d \leq 16$

12. Cookies are sold in the lunchroom for $1.50. Ana wants to buy cookies for a group of her friends. If she has $20, which inequality can be solved to show the number of cookies c she can buy?

F $1.50c < 20$ **H** $1.50c > 20$

G $1.50c \leq 20$ **J** $1.50c \geq 20$

13. Solve $-4(x - 1) < 12$.

A $x > -2$ **C** $x > -3$

B $x < -2$ **D** $x < -3$

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form B continued

14. Solve $2^3 - a > -3(2 - 6)$.

F $a < -6$ **H** $a < -4$

G $a > -6$ **J** $a > -4$

15. John is considering accepting one of two sales positions. ABC Company offers a yearly salary of \$45,000. XYZ Company offers a yearly salary of \$38,000 plus a 2% annual commission on sales. For what amount of sales s is the salary at XYZ Company greater than the salary at ABC Company?

A $s > 7000$ **C** $s > 70{,}000$

B $s > 35{,}000$ **D** $s > 350{,}000$

16. Solve $3(1 + h) \leq 3h + 9$.

F $h \leq 1$ **H** no solutions

G $h \leq 2$ **J** all real numbers

17. Solve $\frac{3}{4}s \geq \frac{1}{4}s + 8$.

A $s \geq 4$ **C** $s \geq 12$

B $s \geq 8$ **D** $s \geq 16$

18. Jasmine and her sister are saving to buy MP3 players. Jasmine has \$50 and plans to save \$10 per week. Her sister has \$80 and plans to save \$7 per week. In how many weeks will Jasmine have more money saved than her sister?

F 2 weeks **H** 10 weeks

G 4 weeks **J** 11 weeks

19. Solve the compound inequality $-2 \leq m + 3 < 13$.

A $-5 \leq m < 10$

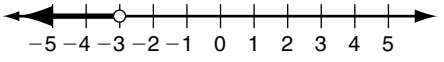
B $-2 \leq m < 13$

C $1 \leq m < 16$

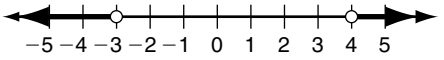
D $6 \leq m < 39$

20. Which graph represents the solutions of $-1 + r > 3$ OR $r + 5 < 2$?

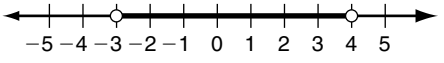
F



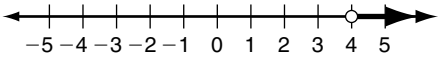
G



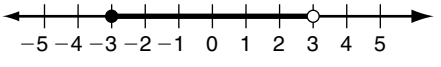
H



J



21. Which compound inequality is shown by the graph below?



A $x \geq -3$ AND $x > 3$

B $x \geq -3$ AND $x < 3$

C $x \geq -3$ OR $x > 3$

D $x \geq -3$ OR $x < 3$

Name _____ Date _____ Class _____

CHAPTER 3 Chapter Test
Form C

Select the best answer.

1. Describe the solutions of $|2 - 5| \geq n$ in words.

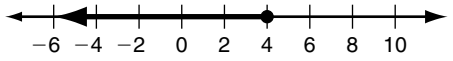
A all real numbers less than or equal to -3

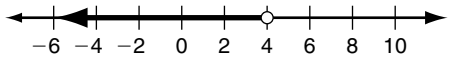
B all real numbers greater than or equal to -3

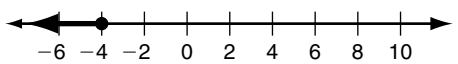
C all real numbers less than or equal to 3

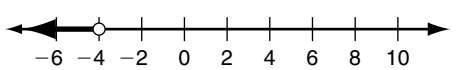
D all real numbers greater than or equal to 3

2. Which graph represents $m < -2^2$?

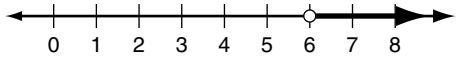
F


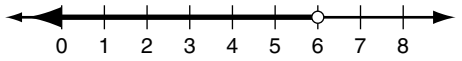
G


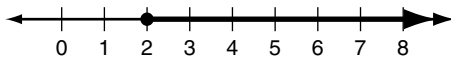
H


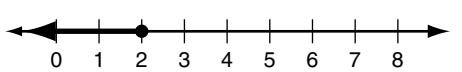
J


3. Which graph represents $y \geq \sqrt{100} - \sqrt{64}$?

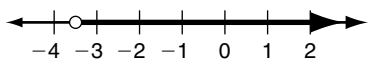
A


B


C


D


4. Which inequality is shown by the graph below?



F $x > -4.5$ **H** $x > -3.5$

G $x \geq -4.5$ **J** $x \geq -3.5$

5. Which inequality represents the situation "no less than 16 people must register"?

A $p > 16$ **C** $p < 16$

B $p \geq 16$ **D** $p \leq 16$

6. Solve $x + 0.25 > -8$.

F $x > -8.25$ **H** $x > -7.75$

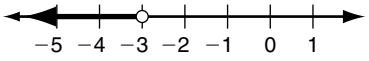
G $x < -8.25$ **J** $x < -7.75$

7. Solve $3.3 \leq m - 4$.

A $m \leq -0.7$ **C** $m \leq 7.3$

B $m \geq -0.7$ **D** $m \geq 7.3$

8. Which inequality has the solutions shown below?



F $4 > d + 7$ **H** $9 + d > 6$

G $d - 8 < -5$ **J** $2 < -1 + d$

9. The maximum capacity of a theater is 471 people. So far, 254 people are seated in the theater. Which inequality can be solved to show the number of people p that can still enter the theater?

A $254 + p < 471$ **C** $254 + p > 471$

B $254 + p \leq 471$ **D** $254 + p \geq 471$

10. Solve $-4 < -3y$.

F $y < \frac{3}{4}$ **H** $y < \frac{4}{3}$

G $y > \frac{3}{4}$ **J** $y > \frac{4}{3}$

11. Solve $\frac{2}{3}d \geq -18$.

A $d \geq -27$ **C** $d \geq -12$

B $d \leq -27$ **D** $d \leq -12$

12. Shares in stock of a new company are selling for \$3.75 per share. If an investor has \$800, which inequality can be solved to show the number of shares s they can buy?

F $3.75s < 800$ **H** $800 < 3.75s$

G $3.75s \leq 800$ **J** $800 \leq 3.75s$

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form C continued

13. Solve $-(x - 4) < -16$.

A $x > 12$ **C** $x > 20$

B $x < 12$ **D** $x < 20$

14. Solve $4(c - 5) > (-2)^2 + 2^3$.

F $c > 4.25$ **H** $c > 7.5$

G $c > 6$ **J** $c > 8$

15. A patio will be built in the shape of a trapezoid. The bases of the trapezoid will measure 14.5 ft and 22.5 ft. What is the minimum height of the trapezoid if the patio is to have an area of no less than 259 sq ft?

A 3.5 ft **C** 14 ft

B 7 ft **D** 18.5 ft

16. Solve $0.3x + 1 > x - 0.7x + 1$.

F no solutions **H** $x < 0.4$

G all real numbers **J** $x > 1$

17. Solve $-\frac{2}{3}x + \frac{1}{2} \leq -x$.

A $x \geq -\frac{3}{2}$ **C** $x \geq 1$

B $x \leq -\frac{3}{2}$ **D** $x \leq 1$

18. Juan is making birdhouses to sell at a craft show. The cost of making the birdhouses is \$80 plus \$6.25 per birdhouse. He will sell them for \$16 each. What is the minimum number of birdhouses he must sell to make a profit?

F 7 birdhouses **H** 9 birdhouses

G 8 birdhouses **J** 10 birdhouses

19. Solve the compound inequality $-3 \leq 2c - 6 \leq 0.5$.

A $-4.5 \leq c \leq -2.75$

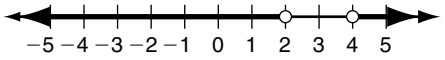
B $1.5 \leq c \leq 3.25$

C $3 \leq c \leq 6.5$

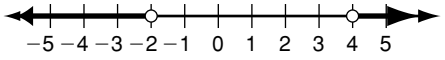
D $6 \leq c \leq 13$

20. Which graph represents the solutions of $-4f - 1 > 7$ OR $-3f < -12$?

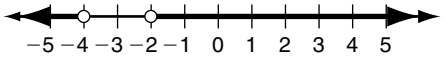
F



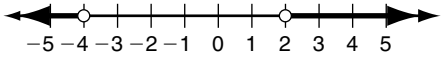
G



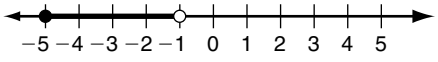
H



J



21. Which compound inequality is shown by the graph below?



A $2x \geq -10$ AND $x > -1$

B $x \geq -5$ AND $-3x > 3$

C $x - 5 \geq 0$ AND $x < -1$

D $x \geq -5$ AND $-4x < -4$

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form A

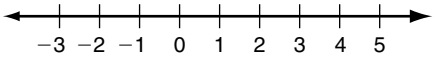
1. Describe the solutions of $4p < 8$ in words.

_____

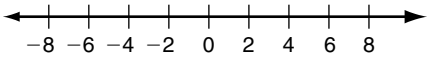
_____

Graph each inequality.

2. $d \leq 2$



3. $h > -6$



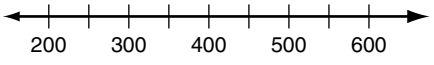
4. Write the inequality shown by the graph.

_____

5. An essay must be at least 500 words long to be accepted. Define a variable and write an inequality for the acceptable number of words in an essay. Graph the solutions.

_____

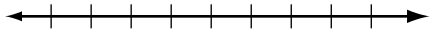
_____



Solve each inequality and graph the solutions.

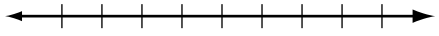
6. $x + 14 \geq 26$

_____



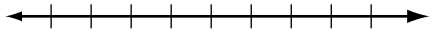
7. $a - 2 < 1$

_____



8. $10 + y > 6$

_____



9. Heath took $40 to the mall. So far, he has purchased a baseball cap for $16.75. Write and solve an inequality to determine how much more money Heath can spend.

_____

_____

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form A continued

Solve each inequality.

10. $2x < -12$

11. $\frac{n}{-3} \geq 2$

12. A math teacher has budgeted $400 for the purchase of new calculators for the school. The calculators cost $70 each. What are the possible numbers of calculators the math teacher can buy?

Solve each inequality.

13. $6t - 6 > 18$

14. $-2(x - 5) \leq 4^2$

15. A principal is choosing between two field trips. The first costs $600. The second costs $240 plus $40 per student. For what number of students is the first trip less expensive?

Solve each inequality.

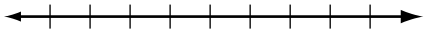
16. $2y + 6 \leq 2(y + 7)$

17. $-10 + \frac{1}{3}y > \frac{2}{3}$

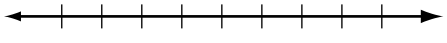
18. Natalie and her sister opened savings accounts at the same time. Natalie deposited $100 and will deposit $10 each month. Her sister deposited $25 and will deposit $25 each month. When will Natalie have less money in her account than her sister?

Solve each compound inequality and graph the solutions.

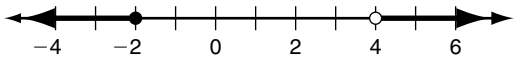
19. $-8 \leq x - 11 < -5$



20. $a - 6 < -4$ OR $a - 1 > 5$



21. Write the compound inequality shown by the graph.



Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form B

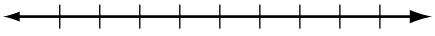
1. Describe the solutions of $\frac{1}{3}x \geq 2$ in words.

_____

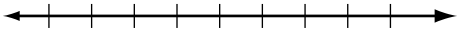
_____

Graph each inequality.

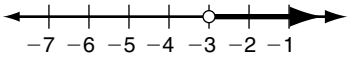
2. $k \leq -1$



3. $w > 2\frac{1}{2}$



4. Write the inequality shown by the graph.



_____

5. Citizens less than 18 years old are not allowed to vote. Define a variable and write an inequality for the ages of citizens who are not allowed to vote.

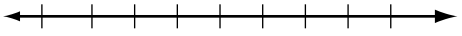
_____

_____

Solve each inequality and graph the solutions.

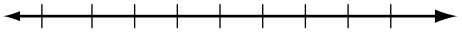
6. $5 < x + 31$

_____



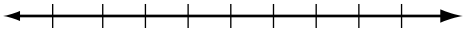
7. $a - \frac{1}{4} > 5\frac{3}{4}$

_____



8. $-5 + b \leq -19$

_____



9. A store manager is accepting applications for part-time workers. He can hire no more than 14 people. So far, he has hired 9 people. Write and solve an inequality to determine how many more people the manager can hire.

_____

_____

_____

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form B continued

Solve each inequality.

10. $-4x < -64$

11. $\frac{4}{5}h \geq -2$

12. A designer is creating shirts that each have 12 buttons. She bought a container of 115 buttons and plenty of fabric. What are the possible numbers of shirts she can make?

Solve each inequality.

13. $\frac{x-3}{-7} \leq 8$

14. $-12 + 3x - 3^2 < 18$

15. One salesperson earns $1600 per month. A second sales person earns $500 plus 5% of their sales per month. For what amount of sales would the second sales person earn more than the first?

Solve each inequality.

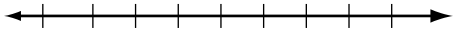
16. $-3(x - 1) > -3x - 2$

17. $\frac{4}{5}x + \frac{1}{3} \leq -1$

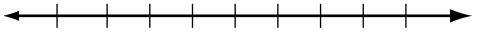
18. Perfect Pipes charges $120 plus $40 an hour to make plumbing repairs. No Leaks Here charges $50 plus $60 an hour. For how many hours is Perfect Pipes less expensive than No Leaks Here?

Solve each compound inequality and graph the solutions.

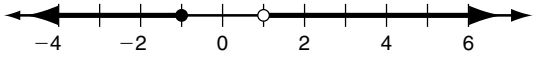
19. $-8 \leq c + 5 < -1$



20. $-a + 8 < -2$ OR $-3a > -9$



21. Write the compound inequality shown by the graph.



Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form C

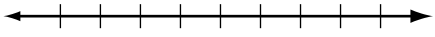
1. Describe the solutions of $(2 - 5)^2 \leq t$ in words.

_____

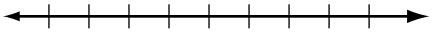
_____

Graph each inequality.

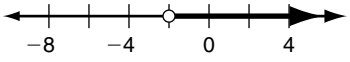
2. $b \leq -4\frac{1}{2}$



3. $w > -\sqrt{36}$



4. Write the inequality shown by the graph.

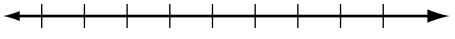


_____

5. It is not safe to walk on ice if it is less than 4 inches thick. Define a variable and write an inequality for thickness of ice on which it is safe to walk. Graph the solutions.

_____

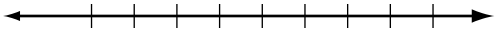
_____



Solve each inequality and graph the solutions.

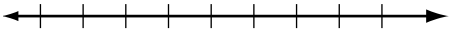
6. $21 + x \leq 21$

_____



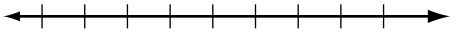
7. $1\frac{2}{3} < -4 + y$

_____



8. $f + 4.5 \geq |-3.5|$

_____



9. During the track season, Larry tries to drink at least 8 cups of water each day. So far today, he drank a 24-ounce bottle of water. Write and solve an inequality to determine how many more ounces of water Larry must drink to fulfill his daily goal. (*Hint:* 1 c = 8 oz)

_____

_____

Name _____ Date _____ Class _____

CHAPTER 3

Chapter Test

Form C continued

Solve each inequality.

10. $20 > -40x$

11. $\frac{7d}{9} \geq -35$

12. Over the summer, Silvio earned $380 by mowing lawns and $80 by tutoring. He wants to take an adventure vacation which costs $45 per night. What are the possible numbers of nights Silvio can sign up for if he spends only the money he earned over the summer?

Solve each inequality.

13. $\frac{1}{2} > \frac{-1 + 5n}{2}$

14. $-30 \geq -4a + 18 - 2(2^3 - a)$

15. The average of Cindy's three test scores must be greater than 70 for her to pass the class. She got a 76 on the last test. She got the same score on her first and second test. She passed the class. What scores could she have gotten on the first two tests?

Solve each inequality.

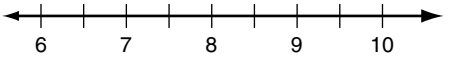
16. $2(-x + 7) < -3x + 8 + x$

17. $\frac{7}{8} < \frac{15}{16} - \frac{x}{6}$

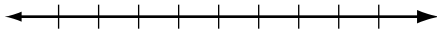
18. Lori rented a booth at the craft fair for $200 to sell baskets she made. The cost of the materials for each basket was $8. If she sells the baskets for $20, how many does she have to sell to make a profit?

Solve each compound inequality and graph the solutions.

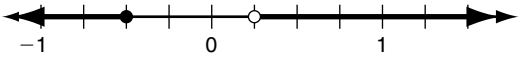
19. $2 < -2n + 20 \leq 4$



20. $4a + 1 > -15$ OR $\frac{a}{-3} \geq 2.5$



21. Write the compound inequality shown by the graph.



5. A
6. F
7. C
8. H
9. B
10. F

Section Quiz: Lessons 3-4 to 3-6

1. A
2. G
3. D
4. F
5. C
6. G
7. C
8. H
9. A
10. G
11. D

Chapter Test Form A

1. A
2. B
3. B
4. A
5. B
6. A
7. C
8. A
9. B
10. A
11. B
12. A
13. A
14. B
15. C
16. A
17. C
18. B
19. B
20. A
21. A

Chapter Test Form B

1. B
2. G
3. C
4. F
5. D
6. F
7. C
8. H
9. D
10. G
11. C
12. G
13. A
14. H
15. D
16. H
17. D
18. J
19. A
20. G
21. B

Chapter Test Form C

1. C
2. J
3. C

4. H

5. B

6. F

7. D

8. F

9. B

10. H

11. A

12. G

13. C

14. J

15. C

16. F

17. B

18. H

19. B

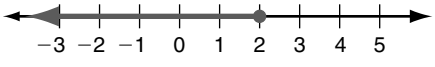
20. G

21. B

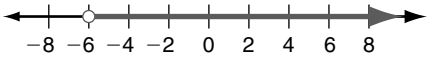
Chapter Test Form A

1. all real numbers less than 2

2.

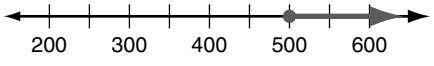


3.

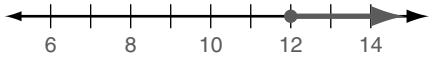


4. $x < 8$

5. w = number of words; $w \geq 500$

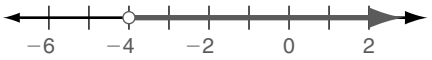


6. $x \geq 12$



7. $a < 3$

8. $y > -4$



9. $16.75 + m \leq 40$; $m \leq 23.25$

10. $x < -6$

11. $n \leq -6$

12. 0, 1, 2, 3, 4, or 5 calculators

13. $t > 4$

14. $x \geq -3$

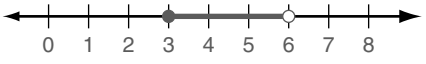
15. greater than 9 students

16. all real numbers

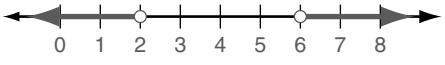
17. $y > 32$

18. more than 5 months from now

19. $3 \leq x < 6$



20. $a < 2$ OR $a > 6$



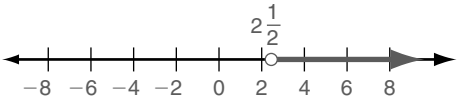
21. $x \leq -2$ OR $x > 4$

Chapter Test Form B

1. all real numbers greater than or equal to 6

2.

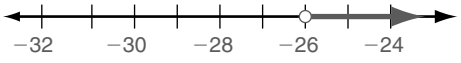
3.



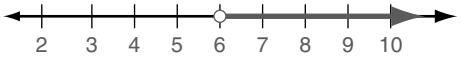
4. $x > -3$

5. a = age; $a < 18$; cannot be negative

6. $x > -26$



7. $a > 6$



8. $b \leq -14$

9. $9 + p \leq 14$; $p \leq 5$ can hire 0, 1, 2, 3, 4, or 5 people

10. $x > 16$

11. $h \geq -\frac{5}{2}$

12. 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9 shirts

13. $x \geq -53$

14. $x < 13$

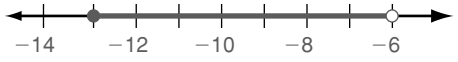
15. sales greater than $22,000

16. all real numbers

17. $x \leq -1\frac{2}{3}$

18. greater than 3.5 hours

19. $-13 \leq c < -6$



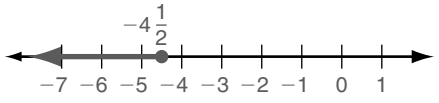
20. $a < 3$ OR $a > 10$

21. $x \leq -1$ OR $x > 1$

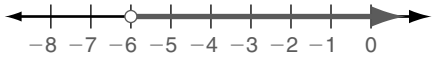
Chapter Test Form C

1. all real numbers greater than or equal to 9

2.



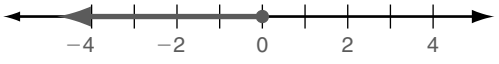
3.



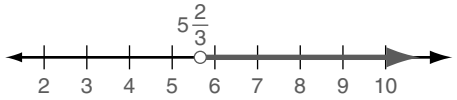
4. $x > -2$

5. t = thickness; $t \geq 4$

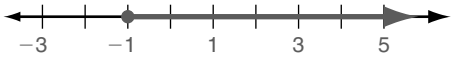
6. $x \leq 0$



7. $y > 5\frac{2}{3}$



8. $f \geq -1$



9. $24 + x \geq 64$; $x \geq 40$

10. $x > -\frac{1}{2}$

11. $d \geq -45$

12. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 nights

13. $n < \frac{2}{5}$

14. $a \geq 16$

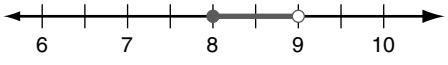
15. greater than 67

16. no solutions

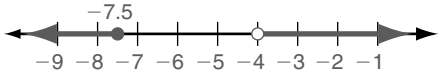
17. $x < \frac{3}{8}$

18. at least 17 baskets

19. $8 \leq n < 9$



20. $a > -4$ OR $a \leq -7.5$



21. $x \leq -0.5$ OR $x > 0.25$

Performance Assessment

1 a. $20 \leq 6b \leq 21$

b. $3.34 \leq b \leq 3.50$.

c. Possible answer: The repeating decimal $3.3\overline{3}$ needs to be rounded up because 6($3.33) = $19.98, which would not win the game.

d. Possible answer: The values in the compound inequality represent dollars and cents, so you should graph solid points at 3.34, 3.35, 3.36, and so on, up to 3.50.

2 a. $20 \leq 0.50p + 17.94 \leq 21$

b. $4.12 \leq p \leq 6.12$

c. 5 or 6 packages