Choose the best answer.

1. A family swimming pool membership costs $55 per month plus a one-time registration fee of $25. If a family has paid a total of $465, how many months have they been members?
   A 4          B 8

2. Which shows $\frac{z-1}{3} = 6$ solved for $z$?
   A  $z = 1$          C  $z = 19$
   B  $z = 175$        D  $z = 22$

3. Which shows $3y^2 + y + 7y - y^2$ simplified?
   A  $4y^2 + 8y$      B  $2y^2 + 8y$

4. Which shows $y - 3x + 2y + 13x$ simplified?
   A  $10x + 2y$      C  $16x + 3y$
   B  $10x + 3y$      D  $16x - 3y$

5. Which shows $3(x + 4) - 2x$ simplified?
   A  $x + 4$        C  $5x + 4$
   B  $x + 12$       D  $5x + 12$

6. Which shows $B = 3c$ solved for $c$?
   A  $c = \frac{B}{3}$

7. Which shows $a + b - n = 2m$ solved for $a$?
   A  $a = 2m + n - b$
   B  $a = 2m - n + b$
   C  $a = b - 2m + n$
   D  $a = -b - 2m + n$

8. The equation $S = 2x\ell + x^2$ gives the surface area $S$ of a square pyramid, where $x$ is the length of each side of its base and $\ell$ is the slant height of the pyramid. What is this equation solved for $\ell$?
   A  $\ell = \frac{S - x^2}{2x}$
   B  $\ell = S - 2x^2 - x$

9. Which inequality is true?
   A  $4(5) < 15$      B  $13 + 7 > 18$

10. Which of the following equations is represented by the graph below?
   A  $h < 2$        B  $h \geq 2$

11. Solve $a + 1 \leq 3$.
   A  $a \leq -2$       C  $a \geq -2$
   B  $a \leq 2$       D  $a \geq 4$

12. Solve $a - 6 \geq 1$.
   A  $a \leq 5$       C  $a \geq -7$
   B  $a \geq -5$       D  $a \geq 7$

13. Which is the solution to $\frac{x}{2} \leq 5$?
   A  $x \leq 5$       C  $x \leq 10$
   B  $x \geq 5$       D  $x \geq 10$

14. Solve $-5x < 45$.
   A  $x < -9$       B  $x > -9$
15. What inequality is shown on the graph below?

A  $2x > 6$  C  $2x \geq 6$
B  $2x > -6$  D  $2x \geq -6$

16. Which is the solution to $4x - 6 < 10$?

A  $x > 1$  C  $x > 4$
B  $x < 1$  D  $x < 4$

17. Which is the solution to $5 + 2x > 7$?

A  $b = 1$  C  $b = 7$
B  $b = 5$  D  $b = 12$

18. Which is the solution to $\frac{x}{3} - \frac{1}{6} > \frac{5}{6}$?

A  $x > 1$  C  $x > 3$
B  $x > 2$  D  $x > 6$

19. Which is the solution to $3 - 2y + 4y = 7$?

A  $y = 0$  C  $y = 2$
B  $y = 1$  D  $y = 4$

20. Which is the solution to $\frac{5y}{9} - \frac{y}{9} = \frac{8}{9}$?

A  $y = 2$  C  $y = 6$
B  $y = 3$  D  $y = 9$

21. Which is the solution to $3b + 7 = 12 + 2b$?

A  $k = 1$  C  $k = 3$
B  $k = 2$  D  $k = 5$
Multiple Choice

Test B

Choose the best answer.

1. A family swimming pool membership costs $45 per month plus a one-time registration fee of $35. If a family has paid a total of $395, how many months have they been members?
   A 4  C 8
   B 5  D 10

2. Which shows $\frac{x-8}{4} = 7$ solved for $x$?
   F $x = -1$  H $x = 20$
   G $x = 15$  I $x = 36$

3. Which shows $3y^2 - y + 7y - y^2$ simplified?
   A $2y^2 - 8y$  C $4y^2 - 8y$
   B $2y^2 + 6y$  D $4y^2 + 6y$

4. Which shows $-2r + s + 4r - 5s$ simplified?
   F $2r - 4s$  H $-6r - 4s$
   G $2r - 5s$  I $-6r + 4s$

5. Which shows $7(4 + x) + 5x$ simplified?
   A $4x + 28$  C $6x + 28$
   B $5x + 28$  D $12x + 28$

6. Which shows $F = kx$ solved for $k$?
   F $k = F - x$  H $k = Fx$
   G $k = \frac{x}{F}$  I $k = \frac{F}{x}$

7. Which shows $c + 3d - 5 = e$ solved for $c$?
   A $c = 3d + e + 5$
   B $c = -3d + e + 5$
   C $c = 3d - e - 5$
   D $c = -3d - e - 5$

8. The equation $S = 2\pi r^2 + 2\pi rh$ gives the surface area $S$ of a right circular cylinder, where $r$ is the radius of its bases and $h$ is height of the cylinder. What is this equation solved for $h$?
   F $h = \frac{S - 2\pi r^2}{2\pi r}$
   G $h = \frac{S - r}{2\pi r}$
   H $h = S - r$
   I $h = S - 2\pi r^2 + 2\pi r$

9. Which inequality is true?
   A $4(6) > 26$  C $10 - 6 < 5$
   B $6 + 11 < 14$  D $6 + (-1) > 5$

10. Which of the following inequalities is represented by the graph below?

   F $g \geq 3$  H $g > 3$
   G $g \leq 3$  I $g < 3$

11. Solve $a + 3 \geq 2$.
   A $a \leq -1$  C $a \geq 1$
   B $a \geq -1$  D $a \leq 5$

12. Solve $a - 6 \geq -1$.
   F $a \leq 5$  H $a \leq -5$
   G $a \geq -5$  I $a \geq 5$

13. Which is the solution to $-3 \leq \frac{x}{3}$?
   A $x \leq -9$  C $x \leq -1$
   B $x \geq -9$  D $x \geq -1$

   F $x > -6$  H $x < 6$
   G $x < -6$  I $x > 8$
15. What inequality is shown on the graph below?

A $-2x > 6$  
B $2x > -6$  
C $-2x \geq 6$  
D $-2x \leq 6$

16. Which is the solution to $3x + 5 > 11$?

F $x < 2$  
G $x > 2$

17. Which is the solution to $5x - 8 > 12$?

A  
B  
C  
D

18. Which is the solution to $\frac{a}{2} + \frac{2}{5} \leq \frac{9}{10}$?

F $a \leq 1$  
G $a \leq 2$  
H $a \leq 5$  
I $a \leq 10$

19. Which is the solution to $4(x + 2) - 5 = -21$?

A $x = -6$  
B $x = -3$  
C $x = 3$  
D $x = 6$

20. Which is the solution to $\frac{4y}{5} - \frac{7y}{10} = \frac{2}{5}$?

F $y = -4$  
G $y = -2$  
H $y = 2$  
I $y = 4$

21. Which is the solution to $-3k - 2k + 12 = 2k - 9$?

A $k = 1$  
B $k = 2$  
C $k = 3$  
D $k = 5$

22. Which is the solution to $2(b + 3) - 9 = b - 11$?

F $b = -4$  
G $b = -8$  
H $b = 4$  
I $b = 8$
Multiple Choice

Test C

Choose the best answer.

1. A family swimming pool membership costs $27.50 per month plus a one-time registration fee of $25. If a family has paid a total of $162.50, how many months have they been members?
   A 4  C 8
   B 5  D 11

2. Which shows \( \frac{y - 16}{5} = 13 \) solved for \( y \)?
   F \( y = 49 \)  H \( y = 71 \)
   G \( y = 50 \)  I \( y = 81 \)

3. Which shows \(-4y^2 - y + 7y - 1.5y^2\) simplified?
   A \(-2.5y^2 - 8y\)  C \(-5.5y^2 - 8y\)
   B \(-2.5y^2 + 6y\)  D \(-5.5y^2 + 6y\)

4. Which shows \(-2r + 5 + 2.2s + 3r - 7s\) simplified?
   F \( r - 4.8s + 5 \)  H \( 5r + 5 - 5.8s \)
   G \( r - 5.8s + 5 \)  I \( 5 \)

5. Which shows \(6(x - 2) - 5x\) simplified?
   A \(-11x - 12\)  C \(x - 12\)
   B \(-x - 12\)  D \(11x - 12\)

6. Which shows \( P = rt \) solved for \( r \)?
   A \( t = \frac{r}{P} \)  C \( t = \frac{P}{r} \)
   B \( r = \frac{P}{t} \)  D \( r = \frac{t}{P} \)

7. Which shows \( P = 2a + 2b + c \) solved for \( c \)?
   A \( c = P - 2a + 2b \)
   B \( c = P - 2a - 2b \)
   C \( c = -P + 2a + 2b \)
   D \( c = -P - 2a + 2b \)

8. The equation \( A = lw + \frac{\pi}{8}w^2 \) gives the area \( A \) of a complex figure that contains a rectangle and a half circle, where \( w \) and \( l \) are the width and length of the rectangle. What is this equation solved for \( l \)?
   F \( l = A - \frac{\pi}{8}w^2 \)  H \( l = \frac{A - \pi w}{8} \)
   G \( l = Aw - \frac{\pi}{8}w^3 \)  I \( l = \frac{A - \frac{\pi}{8}w^2}{8} \)

9. Which inequality is true?
   A \( 5(-2) > 10 \)  C \( 3(13) < 39 \)
   B \( 11 + (-3) < 9 \)  D \( 5 + 12 > 18 \)

10. Which of the following inequalities is represented by the graph below?
    F \( h < 2 \)  H \( h \leq 2 \)
     G \( h > 2 \)  I \( h \geq 2 \)

11. Solve \(-1 < a - 3\).
    A \( a > -4 \)  C \( a > \frac{1}{3} \)
     B \( a > -2 \)  D \( a > 2 \)

12. Solve \( a - 6 \geq -6\).
    F \( a \leq -12 \)  H \( a \geq 0 \)
     G \( a \geq -6 \)  I \( a \geq 1 \)

13. Which is the solution to \(-2 \leq \frac{-2x}{3}\)?
    A \( x \geq -3 \)  C \( x \geq -9 \)
     B \( x \leq -3 \)  D \( x \leq -9 \)

14. Solve \(-10x < -100\).
    A \( x > 10 \)  C \( x > -10 \)
     B \( x < 10 \)  D \( -x > -10 \)

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15. What inequality is shown on the graph below?

-4x ≤ -12  H -4x > -12
-4x ≥ -12  I -4x < -12

16. Which is the solution to -2x - 1 > 5?
A x < -3  C x < 3
B x > -3  D x > 3

17. Which is the solution to -7 + 4x > -3?
A -10 -8 -6 -4 -2 0 2 4 6 8 10
B -10 -8 -6 -4 -2 0 2 4 6 8 10
C -10 -8 -6 -4 -2 0 2 4 6 8 10
D -10 -8 -6 -4 -2 0 2 4 6 8 10

18. Which is the solution to
\[ \frac{3}{4} + \frac{a}{8} \leq -\frac{1}{4} \]?
A a ≤ -4  C a ≤ 4
B a ≤ 2  D a ≤ 8

19. Which is the solution to
5 - 2(x - 3) = -21?
A x = -16  C x = 15
B x = -15  D x = 16

20. Which is the solution to
\[ \frac{5}{6} = \frac{2y}{3} - \frac{y}{2} \]?
F y = 2  H y = 5
G y = 3  I y = 6

21. Which is the solution to
6k - 8 = 5 + 6k?
A k = 0  C k = 1
B k = 0.5  D no solution

22. Which is the solution to
1 - 5(b + 3) = b - (b - 1)?
F b = -3  H b = 3
G b = 0  I no solution
1. A family swimming pool membership costs $30 per month plus a one-time registration fee of $25. If a family has paid a total of $325, how many months have they been members?

2. Solve \( \frac{z - 1}{2} = 5 \).

3. Simplify \( 4x^2 + 2x - 3x - x^2 \).

4. Simplify \( -3r + 5r - s + 7s \).

5. Simplify \( 2(x + 1) + 3x \).

6. Solve \( L = 2p \) for \( p \).

7. Solve \( 4r + s = 2q \) for \( s \).

8. The equation \( A = kb + kc \) gives the area of a trapezoid \( A \) where \( k \) is half the height and \( b \) and \( c \) give the lengths of the two parallel sides. Solve this equation for \( b \).

9. Compare \( 14 - 6 \) \( \square \) 5. Write > or <.

10. Write an inequality that represents the graph below.

11. For 11 and 12, solve each inequality.
   11. \( z + 3 > 2 \)
   12. \( 4 < x - 8 \)

13. Solve \( \frac{x}{3} \leq 2 \).
14. Solve \(-2x > 12\).

15. What inequality is shown on this graph?

16. Solve \(2x - 7 < 3\).

17. Graph the solution set to \(2x - 3 > -5\).

18. Solve \(\frac{3x}{5} - \frac{5}{10} \leq \frac{1}{10}\).

19. Solve \(2a - 8 + 3a + 2 = 9\).

20. Solve \(\frac{3y}{5} - \frac{y}{5} = \frac{4}{5}\).

21. Solve \(3b + 7 = 12 + 2b\).

22. Solve \(2k - 5 + 6k = 8 + 5k - 1\).
1. A family swimming pool membership costs $35 per month plus a one-time registration fee of $20. If a family has paid a total of $335, how many months have they been members?

2. Solve \( \frac{z - 9}{5} = 3 \).

3. Simplify \( 4x^2 - 2x + 3x - 7x^2 \).

4. Simplify \( -3r - 5r - s + 7s \).

5. Simplify \( 9(x + 3) - 3x \).

6. Solve \( S = kx \) for \( x \).

7. Solve \( y = -3x + b \) for \( b \).

8. The equation \( P = a + 2b + c \) gives the perimeter of a triangle where \( a \), \( 2b \), and \( c \) are sides of the triangle. Solve this equation for \( b \).

9. Compare \( 11 + (-4) \) \( \square \) 6. Write \( > \) or \( < \).

10. Write an inequality that represents the graph below.

For 11 and 12, solve each inequality.

11. \( 12 + x \geq 20 \)

12. \( y - 4 \geq -10 \)
13. Solve \(-4 \leq \frac{x}{2}\).

14. Solve \(-6x > 42\).

15. What inequality is shown on this graph?

16. Solve \(5x + 1 > 6\).

17. Graph the solution set to \(5x + 4 > -1\).

18. Solve \(\frac{a}{4} + \frac{1}{6} > \frac{11}{12}\).

19. Solve \(3(c + 5) - 7 = 14\).

20. Solve \(\frac{3y}{7} - \frac{3y}{14} = \frac{9}{14}\).

21. Solve \(5k + 2k + 6 = 3k - 6\).

22. Solve \(9 + 5(b + 2) = 13 - b\).
1. A family swimming pool membership costs $32.50 per month plus a one-time registration fee of $25. If a family has paid a total of $252.50, how many months have they been members?

2. Solve \( \frac{z - 9}{13.5} = 3. \)

3. Simplify \( 22y - 8y^2 + 13y^2 - 7y - 4y. \)

4. Simplify \( -3r - s + 5 + 5r + 11s + 7 - 6r - s. \)

5. Simplify \( 2(3 - 2y) + 7y. \)

6. Solve \( T = rF \) for \( r. \)

7. Solve \( S = km + n - 1 \) for \( n. \)

8. The equation \( v = s + gt \) gives the final velocity \( v \) of an object where \( s \) is the object’s initial speed and \( t \) is the time the object has been acted upon by the acceleration of gravity \( g. \) Solve this equation for \( t. \)

9. Compare \( 5(-12) \) \( \square \) 60. Write > or <.

10. Write an inequality that represents the graph below.

11. For 11 and 12, solve each inequality.

12. \( 41 \leq 3x - 7 \)

13. \( -10 \leq -\frac{2x}{5}. \)
14. Solve \(-6x > 87\).

15. What inequality is shown on this graph?

\[
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\end{array}
\]

16. Solve \(-3x - 4 < 5\).

17. Graph the solution set to \(-1 < 4 + 5x\).

18. Solve \(-\frac{1}{3} + \frac{a}{6} \leq \frac{2}{3}\).

19. Solve \(12 - 3(x - 6) = -3\).

20. Solve \(\frac{1}{6} = \frac{3y}{4} - \frac{11y}{24}\).

21. Solve \(4k + 1 = -7 + 4k\).

22. Solve \(3 - 4(b + 2) = b - (b - 3)\).
CHAPTER 7

Chapter 7 Section A Quiz
1. B
2. I
3. B
4. G
5. C
6. H
7. D
8. I
9. A

Chapter 7 Section B Quiz
1. D
2. H
3. A
4. H
5. B
6. H
7. A
8. G
9. A
10. H

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

Chapter 7 Multiple Choice Test B
1. C
2. I
3. B
4. F
5. D
6. I
7. B
8. F
9. C
10. F
11. B
12. I
13. B
14. G

Chapter 7 Multiple Choice Test C
1. B
2. I
3. D
4. F
5. C
6. B

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Chapter 7 Free Response Test A

1. 10 months
2. \( z = 11 \)
3. \( 3x^2 - x \)
4. \( 2r + 6s \)
5. \( 5x + 2 \)
6. \( p = \frac{L}{2} \)
7. \( s = 2q - 4r \)
8. \( b = \frac{A - kc}{k} \) or \( b = \frac{A}{k} - c \)
9. >
10. \( x < -2 \)
11. \( z > -1 \)
12. \( x > 12 \)
13. \( x \leq 6 \)
14. \( x < -6 \)
15. \( x \geq -1 \)
16. \( x < 5 \)
17.

Chapter 7 Free Response Test B

1. 9 months
2. \( z = 24 \)
3. \( -3x^2 + x \)
4. \( -8r + 6s \)
5. \( 6x + 27 \)
6. \( x = \frac{S}{k} \)
7. \( b = 3x + y \)
8. \( b = \frac{P - a - c}{2} \)
9. >
10. \( x > -1 \)
11. \( x \geq 8 \)
12. \( y \geq -6 \)
13. \( x \geq -8 \)
14. \( x < -7 \)
15. \( x < -2 \)
16. \( x > 1 \)
17.

Chapter 7 Free Response Test C

1. 7 months
2. \( z = 49.5 \)
3. \( 5y^2 + 11y \)
4. \( -4r + 9s + 12 \)
5. $3y + 6$

6. $r = \frac{T}{F}$

7. $n = S - km + 1$

8. $t = \frac{v - s}{g}$

9. <

10. $x \geq -3$

11. $x \geq -11$

12. $x \geq 16$

13. $x \leq 25$

14. $x < -14.5$

15. $x \leq -2$

16. $x > -3$

17. $\underline{\text{Chapter 7 Performance Test}}$

1. A. $x = 7$; Add 4 to each side. Then divide each side by 3.

2. A. $35 + 6h \leq 71$ where $h$ is hours; $h \leq 6$

3. B. $z = 30$; Add 3 to each side. Then multiply each side by 6.

4. C. $x = -4$; Subtract $2x$ and 3 from each side. Then divide each side by 4.

5. $\underline{\text{Chapter 7 Cumulative Test}}$

1. D

2. H

3. B

4. F

5. C

6. I

7. D

8. F

9. A

10. G

11. C

12. H

13. C

14. F

15. C

16. G

17. B

18. $a \leq 6$

19. $x = 11$

20. $y = 4$

21. no solution

22. $b = -2$

23. D

24. H

25. B

26. I

27. C

28. F

29. B

30. I

31. B

32. H

33. A

34. H

35. B

36. G

37. A