1. (Unit 7) The table shows points on two linear functions, \( f \) and \( g \).

<table>
<thead>
<tr>
<th>( x )</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>( f(x) )</td>
<td>-0.4</td>
<td>0.1</td>
<td>0.6</td>
<td>1.1</td>
<td>1.6</td>
<td>2.1</td>
</tr>
<tr>
<td>( g(x) )</td>
<td>-7.0</td>
<td>-4.6</td>
<td>-2.2</td>
<td>0.2</td>
<td>2.6</td>
<td>5.0</td>
</tr>
</tbody>
</table>

What is the approximate \( x \)-value of the intersection of \( y = f(x) \) and \( y = g(x) \)?

(A) \( x \approx -1.2 \)
(B) \( x \approx 0.6 \)
(C) \( x \approx 0.9 \)
(D) \( x \approx 1.5 \)

2. (Unit 7) What is the \( x \)-coordinate of the point of intersection of these two lines?

\[
\begin{align*}
\begin{cases}
  y = -2x - 5 \\
  4x + y = 1
\end{cases}
\end{align*}
\]

(A) \(-11\)
(B) \(1\)
(C) \(3\)
(D) The lines do not intersect.
3. (Unit 7) Use this system of equations.

\[
\begin{align*}
-4x + 2y &= 8 \\
3x + 10y &= 6
\end{align*}
\]

If the second equation is rewritten as

\[3x + 5(m) = 6,\]

which expression is equivalent to \( m \)?

(A) \(-3x + 6\)  
(B) \(2x + 4\)  
(C) \(4x + 8\)

4. (Unit 7) Use the system of equations.

\[
\begin{align*}
x + 8y &= 3 \\
2x - 2y &= -7
\end{align*}
\]

Which step(s) would create equations so that the coefficients of one of the variables are opposites?

(A) Multiply the first equation by 7.  
   Multiply the second equation by 3.  
(B) Multiply the first equation by \(-2\).  
   Multiply the second equation by 4.  
(C) Multiply the first equation by 2.  
(D) Multiply the second equation by 4.
5. (Unit 7) Michael has 34 coins in nickels and dimes. The total value of the coins is $2.45. If Michael has \( d \) dimes and \( n \) nickels, which system of equations can be used to find the number of each coin?

(A) \[
\begin{align*}
\quad d + n &= 15 \\
5d + 10n &= 245
\end{align*}
\]

(B) \[
\begin{align*}
\quad d + n &= 15 \\
10d + 5n &= 245
\end{align*}
\]

(C) \[
\begin{align*}
\quad d + n &= 34 \\
5d + 10n &= 245
\end{align*}
\]

(D) \[
\begin{align*}
\quad d + n &= 34 \\
10d + 5n &= 245
\end{align*}
\]

6. (Unit 7) Use the system of linear equations.

\[
\begin{align*}
7x - 3y &= 8 \\
2x - 6y &= m
\end{align*}
\]

Which values of \( k \) and \( m \) make the lines parallel?

(A) \( k = -2, \; m = -16 \)

(B) \( k = 1, \; m = 10 \)

(C) \( k = 1, \; m = 16 \)

(D) \( k = 2, \; m = 8 \)
7. (Unit 7) Lynn and Tina are planning a foot race. Lynn can run 16.9 feet per second and Tina can run 10 feet per second. Lynn gives Tina a 50-foot head start. The diagram below shows distance-time graphs for Lynn and Tina.

After about how much time will Lynn pass Tina?

(A) 5 seconds  
(B) 7 seconds  
(C) 10 seconds  
(D) 12 seconds

8. (Unit 7) Use the system of equations.

\[
\begin{align*}
  x + y &= 35 \\
-5x + 10y &= 200
\end{align*}
\]

(a) Find the solution to the system.
(b) Explain why the solution from part (a) is also a solution to \(-4x + 11y = 235\).
9. (Unit 7) Use the linear equation \( y = -2x + 5 \).

   (a) Identify two solutions to the equation.
   (b) Write a second linear equation that has one of your answers in part (a) as a solution, but not the other.
   (c) Write a third linear equation that has the solution (0, 0), but has no solutions in common with \( y = -2x + 5 \).

10. (Unit 7) A toy company is manufacturing a new doll. The cost of producing the doll is $10,000 to start plus $3 per doll. The company will sell the doll for $7 each.

    (a) Write functions \( C(n) \) and \( I(n) \) to represent the cost of producing the dolls and income from selling the dolls, respectively.
    (b) Graph the functions.
    (c) How many dolls must be produced for the company to break even, i.e. \( C(n) = I(n) \)?
    (d) Compute \( I(1500) - C(1500) \). What does this mean for the company?

11. (Unit 7) Use the system of equations.

    \[
    \begin{aligned}
    -8x - 4y &= -64 \\
    2x + y &= 16
    \end{aligned}
    \]

    Which describes the solution set of the system?

    (A) There is a single solution of (0, 16).
    (B) There is a single solution of (8, 0).
    (C) There are no solutions to the system.
    (D) There are an infinite number of solutions to the system.
12. (Unit 7) How many solutions does the system of equations have?

\[
\begin{cases}
-6x - 4y = -64 \\
3x + 2y = 32
\end{cases}
\]

(A) no solution
(B) one solution
(C) two solutions
(D) infinitely many solutions

13. (Unit 7) In a community service program, students earn points for two tasks: painting over graffiti and picking up trash. The following constraints are imposed on the program.

1) A student may not serve more than 10 total hours per week.
2) A student must serve at least 1 hour per week at each task.

Let \( g \) = the number of hours a student spends in a week painting over graffiti.
Let \( t \) = the number of hours a student spends in a week picking up trash.

Which system represents the imposed constraints?

(A) \[
\begin{cases}
g + t \leq 10 \\
g \geq 1 \\
t \geq 1
\end{cases}
\]
(B) \[
\begin{cases}
g + t \leq 10 \\
g \geq 0 \\
t \geq 0
\end{cases}
\]
(C) \[
\begin{cases}
g + t \leq 8 \\
g \geq 1 \\
t \geq 1
\end{cases}
\]
(D) \[
\begin{cases}
g + t \leq 8 \\
g = t
\end{cases}
\]
14. (Unit 7) Juan is considering purchasing three online computer games. The cost of each is shown in the table. Some have monthly subscription fees which must be paid each calendar month *before* the game can be played.

<table>
<thead>
<tr>
<th>Game</th>
<th>Game Price</th>
<th>Subscription Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space Pilot</td>
<td>$75</td>
<td>None</td>
</tr>
<tr>
<td>Puzzles of Gold</td>
<td>$25</td>
<td>$10/month</td>
</tr>
<tr>
<td>World of Cars</td>
<td>Free</td>
<td>$25/month</td>
</tr>
</tbody>
</table>

Juan currently has $50 saved. He earns an allowance of $15 on the *last day* of every month.

(a) Which game costs the least if Juan plays it for 2 months? 5 months? 7 months? Support your answers.

(b) Juan typically plays a game for one year before losing interest. Based on his current savings and future allowance, which game(s) can Juan afford? Explain.

(c) Are there any games Juan cannot afford now, but could in the future? Explain.

(d) Can Juan afford more than one game? If so, which ones? Explain.
15. (Unit 7) For a fundraiser, an art club is making paper frogs. Here are some conditions about the fundraiser.

- The club has 500 sheets of paper to make frogs.
- One sheet of paper will produce one large frog.
- One sheet of paper will produce two small frogs.
- The club can produce 15 small frogs per hour.
- The club can produce 20 large frogs per hour.
- The club has 40 hours to produce the frogs.

This graph shows how many of each size frog can be made under the conditions.

(a) Identify the vertices of the shaded region.

The club will sell large frogs for $3 each and small frogs for $2 each. Income is maximized using quantities from at least one of the vertices of the shaded region.

(b) What is the maximum income and how many of each size frog should be produced?

(c) One boundary of the region is \( \frac{1}{2} S + L = 500 \). Explain what this equation means in context of the situation.
16. (Unit 7) The volleyball team is having a fundraiser and can purchase t-shirts for $10 and sweatshirts for $15. The team has a budget of $1200. Due to shipping costs, no more than a total of 100 t-shirts and sweatshirts combined can be ordered. Let $t$ represent the number of t-shirts sold and $s$ represent the number of sweatshirts sold.

The constraints are illustrated in the graph.

The team makes a profit of $6 on each t-shirt and $10 on each sweatshirt. How many of each need to be sold to maximize profit?

The objective function for profit is $P = 6t + 10s$.

(A) 60 t-shirts, 40 sweatshirts
(B) 40 t-shirts, 60 sweatshirts
(C) 0 t-shirts, 80 sweatshirts
(D) 100 t-shirts, 0 sweatshirts
1. (Unit 8) What is the value of \(27^{\frac{1}{3}}\)?

(A) \(\frac{1}{9}\)

(B) \(\frac{1}{3}\)

(C) 9

(D) 3

2. (Unit 8) The graph shows an exponential function.

What is the equation of the function?

(A) \(y = \left(\frac{2}{3}\right)^x\)

(B) \(y = 2(3)^x\)

(C) \(y = 2\left(\frac{3}{2}\right)^x\)
3. (Unit 8) If \( f(x) = 2^x \), where is the y-intercept of \( g(x) = f(x) + 4 \)?

(A) (0, 4)
(B) (0, 5)
(C) (0, 1)
(D) (1, 0)

For questions 4-6, use the function \( f(x) = 2^x \).

4. (Unit 8) The y-intercept of \( y = f(x) \) is (0, 1).

(A) True
(B) False

5. (Unit 8) The slope of \( y = f(x) \) is equal for all values of \( x \).

(A) True
(B) False

6. (Unit 8) There are no values of \( x \) for which \( f(x) < 0 \).

(A) True
(B) False
7. (Unit 8) Use the graph.

What is the equation of the function?

(A) \( f(x) = -\frac{1}{2}x + 2 \)

(B) \( f(x) = -2x + 2 \)

(C) \( f(x) = 2^x + 1 \)

(D) \( f(x) = \left(\frac{1}{2}\right)^x + 1 \)

For questions 8-9, use this scenario.

The tuition at a private college can be modeled by the equation \( T(y) = $30,000(1.07)^y \), where \( y \) is the number of years since 2000.

8. (Unit 8) The tuition in the year 2000 was $30,000.
   (A) True
   (B) False

9. (Unit 8) The growth rate of tuition is 107%.
   (A) True
   (B) False
10. (Unit 8) The graph shows two functions, $f$ and $g$.

Which describes $g(x)$ in terms of $f(x)$?

(A) $g(x) = -2f(x)$
(B) $g(x) = f(x-3)$
(C) $g(x) = f(x) - 3$
11. (Unit 8) The graph models the amount of a radioactive element present over the course of a 10-minute experiment.

What is the average rate of change of the amount of the element over the 10-minute experiment?

(A) –0.2 g/min  
(B) –1.8 g/min  
(C) –2.0 g/min  
(D) –5.0 g/min
For questions 12-14, determine which expressions are equal to \((1+0.06)^t\).

12. (Unit 8) The growth rate is 6%?
   (A) True
   (B) False

13. (Unit 8) \(1.06^t = (1+0.06)^t\)
   (A) True
   (B) False

14. (Unit 8) \(1+0.06^t = (1+0.06)^t\)
   (A) True
   (B) False

15. (Unit 8) A student noticed that the value of \(f(2)\) is 10% less than \(f(1)\). He also noticed that \(f(3)\) is 10% less than \(f(2)\). Which is true?
   (A) \(f\) is a linear function with slope \(\frac{1}{10}\).
   (B) \(f\) is a linear function with slope \(\frac{9}{10}\).
   (C) \(f\) is an exponential function with base \(\frac{1}{10}\).
   (D) \(f\) is an exponential function with base \(\frac{9}{10}\).

16. (Unit 8) A population begins with 1,200 individuals and grows at a rate of 10% per year. Which function describes the population?
   (A) \(P(x) = 1200(1.1)^x\)
   (B) \(P(x) = 1200(1.2)^x\)
   (C) \(P(x) = 1320(1.1)^x\)
17. (Unit 8) Solve each equation for the variable indicated.

   (a) \(3 \cdot 2^x = 48\), for \(x\).

   (b) \(k^{3/2} = \sqrt[4]{k^n}\), for \(n\).

   (c) \(\left((1+r)^{1/2}\right)^{2t} = (1+r)^6\), for \(t\).

18. (Unit 8) Mark and Sofia are looking at this pattern of dots.

   
   
   Mark says the number of dots in figure number \(n\) is equal to \(n^2 + 1\).

   Sofia says the number of dots in figure number \(n\) is equal to \(n(n+1)-(n-1)\).

   (a) Using the dot patterns, explain why each student is correct.

   (b) Show algebraically that Mark’s and Sofia’s expressions are equivalent.

19. (Unit 8) Becky has one piece of paper. She cuts the paper in half and then has two pieces. She cuts these in half to get four pieces. The process continues. Which describes how many pieces she has at each step?

   (A) \(p(1) = 1; \ p(n) = 2p(n-1)\), for \(n \geq 2\)

   (B) \(p(1) = 1; \ p(n) = \frac{1}{2} p(n-1)\), for \(n \geq 2\)

   (C) \(p(1) = 1; \ p(n) = p(n-1) + 1\), for \(n \geq 2\)
20. (Unit 8) Which recursive sequence is equivalent to \( t(n) = 4 \left( \frac{2}{3} \right)^n \)?

(A) \( t(1) = 4; t(n+1) = \frac{2}{3} t(n), \) for \( n \geq 1 \)

(B) \( t(1) = \frac{8}{3}; t(n+1) = \frac{2}{3} t(n), \) for \( n \geq 1 \)

(C) \( t(1) = 4; t(n+1) = \left( \frac{2}{3} \right)^t(n), \) for \( n \geq 1 \)

(D) \( t(1) = \frac{8}{3}; t(n) = \left( \frac{2}{3} \right)^t(n), \) for \( n \geq 1 \)

For questions 21-22, classify each number as rational or irrational.

21. (Unit 8) \(-7 + \sqrt{3}\)

(A) rational

(B) irrational

22. (Unit 8) \(2 \frac{1}{3} + \frac{17}{2}\)

(A) rational

(B) irrational

23. (Unit 8) Answer each part.

(a) What is an irrational number?

(b) Explain why \(2 + \sqrt{3}\) is an irrational number.

24. (Unit 8) The irrational numbers are closed under multiplication.

(A) True

(B) False
25. (Unit 8) In each part, provide an example of the statement.

(a) The sum of two rational numbers is rational.
(b) The product of a rational number and an irrational number is irrational.
(c) The product of two irrational numbers can be rational.

26. (Unit 8) Answer each part.

(a) Write $\sqrt{24}$ as the product of a rational and an irrational number.
(b) Give an example where the product of two irrational numbers is a rational number.
(c) Explain why the sum of a rational number and an irrational number must be irrational.

27. (Unit 8) Which is equivalent to $\sqrt{18x^2y^3}$ where $x > 0$ and $y > 0$?

(A) $9xy\sqrt{y}$
(B) $3xy\sqrt{2y}$
(C) $3x^2y^2\sqrt{2y}$
(D) $9x^2y^2\sqrt{y}$

28. (Unit 8) Which is equivalent to $\sqrt{\frac{64}{100}}$?

(A) $\frac{32}{10}$
(B) $\frac{32}{50}$
(C) $\frac{8}{10}$
(D) $\frac{8}{100}$
29. (Unit 8) Which is equivalent to \( \sqrt{6} \sqrt{8} \)?

(A) \( 4 \sqrt{3} \)
(B) \( 8 \sqrt{3} \)
(C) 12
(D) 24

30. (Unit 8) Which is equivalent to \( \frac{\sqrt{27}}{\sqrt{36}} \)?

(A) \( \frac{3}{4} \)
(B) \( \frac{\sqrt{3}}{4} \)
(C) \( \frac{3}{2} \)
(D) \( \frac{\sqrt{3}}{2} \)

31. (Unit 8) Which is equivalent to \( \sqrt{24} \)?

(A) \( 8 \sqrt{3} \)
(B) \( 2 \sqrt{6} \)
(C) \( 6 \sqrt{2} \)
(D) \( 2 \sqrt{12} \)

32. (Unit 8) Which is equivalent to \( \sqrt{xy} \sqrt{x^3 y^5} \)?

(A) \( x^2 y^3 \)
(B) \( x^4 y^6 \)
(C) \( xy^2 \sqrt{xy} \)
(D) \( x^2 y^4 \sqrt{xy} \)
33. (Unit 8) Which is equivalent to $\sqrt[3]{\frac{120}{3}}$?

(A) $2\sqrt[3]{10}$
(B) $4\sqrt[3]{10}$
(C) $10\sqrt[3]{2}$
(D) $10\sqrt[3]{4}$

34. (Unit 8) A class of students was told to compute the area of the rectangle below.

\[
\begin{array}{c}
\sqrt{5} \\
\sqrt{15}
\end{array}
\]

The class came up with three different values for the area:

\[2\sqrt{5} \quad 5\sqrt{3} \quad \sqrt{75}\]

How many of those values correctly represent the area of the rectangle?

(A) 0
(B) 1
(C) 2
(D) 3

35. (Unit 8) Which is equivalent to $\frac{2}{y^3}$?

(A) $2\sqrt[3]{y}$
(B) $3\sqrt[3]{y}$
(C) $\frac{3}{\sqrt[3]{y^2}}$
(D) $\sqrt[3]{y^3}$
36. (Unit 8) What is the value of \( n \) when \( 16^n = 2 \)?

(A) \( \frac{1}{8} \)

(B) \( \frac{1}{4} \)

(C) \( \frac{1}{2} \)

37. (Unit 11) If \( p^2 = 25 \) and \( q^2 = 16 \), which of these CANNOT equal \( p + q \)?

(A) \(-1\)

(B) \(9\)

(C) \(41\)

For questions 38-39, use the equation \( x^2 = (2x + p)^2 \).

38. (Unit 11) \( x = 2x + p \)

(A) True

(B) False

39. (Unit 11) \( x = -(2x + p) \)

(A) True

(B) False
40. (Unit 11) Solve the equation \( \frac{u^2}{2} + P = h \) for \( u \), where all variables are positive real numbers.

(A) \( u = \sqrt{2h-P} \)

(B) \( u = \frac{\sqrt{h-P}}{2} \)

(C) \( u = \sqrt{2(h-P)} \)

(D) \( u = \frac{\sqrt{h}}{2-P} \)

41. (Unit 11) Solve the equation for \( x \):

\[ a(x-h)^2 + k = p \]

(A) \( x = h \pm \sqrt{\frac{p-k}{a}} \)

(B) \( x = h \pm \sqrt{\frac{p}{a} - \sqrt{k}} \)

(C) \( x = h \pm \sqrt{\frac{p-k}{a}} \)

(D) \( x = h \pm \sqrt{\frac{p-k}{a}} \)

42. (Unit 11) The equation \( x^2 = a \) has no real solutions. What must be true?

(A) \( a < 0 \)

(B) \( a = 0 \)

(C) \( a > 0 \)
43. (Unit 11) What is the solution set of the equation \(4(t-3)^2-1=8\)?

(A) \(\left\{\frac{1}{2}, \frac{4}{2}\right\}\)

(B) \(\left\{\frac{3}{4}, \frac{5}{4}\right\}\)

(C) \(\left\{3-\sqrt{3}, 3+\sqrt{3}\right\}\)

(D) \(\left\{3-\sqrt{5}, 3+\sqrt{5}\right\}\)

44. (Unit 11) Solve each quadratic equation for \(x\).

(a) \(x^2-8=0\)

(b) \((x-2)^2-4=0\)

(c) \(3(x+6)^2=15\)

45. (Unit 11) The area of the triangle below is 24 square units. What is the height of the triangle?

(A) 6 units

(B) 12 units

(C) \(\sqrt{12}\) units

(D) \(\sqrt{24}\) units
46. (Unit 9) Which expression is equivalent to $6x^2 - 4x + 3 - 5 - 8x^2 + 7x$?

(A) $-2x^2 + 3x - 2$
(B) $-2x^2 + 11x - 2$
(C) $14x^2 + 3x + 8$
(D) $14x^2 + 11x + 8$

47. (Unit 9) What expression must the center cell of the table contain so that the sums of each row, each column, and each diagonal are equivalent?

<table>
<thead>
<tr>
<th>$5x^2 + x - 9$</th>
<th>$-x^2 - x - 4$</th>
<th>$2x^2 + 3x - 2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-x^2 + 3x + 2$</td>
<td>$5x^2 - x - 12$</td>
<td>$2x^2 - x - 8$</td>
</tr>
<tr>
<td>$2x^2 - x - 8$</td>
<td>$5x^2 + 3x - 6$</td>
<td>$-x^2 + x - 1$</td>
</tr>
</tbody>
</table>

(A) $2x^2 + x - 5$
(B) $4x^2 + 2x - 10$
(C) $6x^2 + 3x - 15$

48. (Unit 9) Subtract:

$$\left(9y^2 - 5y + 6\right) - \left(3y^2 + y - 4\right)$$

(A) $6y^2 + 4y + 2$
(B) $6y^2 - 4y + 10$
(C) $6y^2 + 6y + 2$
(D) $6y^2 - 6y + 10$
For questions 49-51, answer each with respect to the system of polynomials.

49. (Unit 9) The system of polynomials is closed under subtraction.
   
   (A) True
   (B) False

50. (Unit 9) The system of polynomials is closed under division.
    
    (A) True
    (B) False

51. (Unit 9) The system of polynomials is closed under multiplication.
    
    (A) True
    (B) False

52. (Unit 9) Answer each part.
    
    a) Define “polynomial” and give two examples.
    
    b) Give an example where the sum of two binomials is a trinomial.
    
    c) When two polynomials are multiplied, the result must be a polynomial. Explain why this is true.

53. (Unit 9) Under what operations is the system of polynomials NOT closed?
    
    (A) addition
    (B) subtraction
    (C) multiplication
    (D) division
54. (Unit 9) Which expression is equivalent to \( xc + xb + yc + yb \) ?

(A) \((x+b)(y+c)\)
(B) \((x+c)(y+b)\)
(C) \((x+y)(b+c)\)

55. (Unit 9) Let \( x^2 + y^2 = 23 \) and \( xy = 6 \). What is the value of \( (x + y)^2 \)?

(A) 9
(B) 23
(C) 29
(D) 35

56. (Unit 9) Which is equivalent to \( 3x\left(x^2 y + 2xy^2\right) \)?

(A) \(3x^2 y + 6xy^3\)
(B) \(3x^3 y + 2xy^2\)
(C) \(3x^3 y + 6x^2 y^2\)
(D) \(9x^4 y^3\)

57. (Unit 9) Expand the expression \( (3x - 7)^2 \).

(A) \(9x^2 - 42x - 49\)
(B) \(9x^2 - 42x + 49\)
(C) \(9x^2 - 49\)
(D) \(9x^2 + 49\)

58. (Unit 9) Given \( ax^2 + bx + c = 2(1.2x + 0.3)(x - 0.5) + \left(0.5x^2 + 2.5x - 1.3\right) \).

What are the values of \( a, b, \) and \( c \)?
59. (Unit 9) Given \( f(x) = 2x - 3 \), \( g(x) = \frac{x}{3} + 2 \), and \( h(x) = 3x^2 - x - 4 \), find:

(a) \( f(x) \cdot g(x) \)

(b) \( f(x) + h(x) \)

(c) \( f(x) - g(x) \)

60. (Unit 9) Which is equivalent to \( (4x^2 - 9y^4) \)

(A) \( (2x - 3y^2)^2 \)

(B) \( (2x - 3y^2)(2x + 3y^2) \)

(C) \( (2x + 3y^2)(2x - 3y)(2x + 3y) \)

For questions 61-63, use the expression \( x^4 - y^4 \).

61. (Unit 9) \( (x^2 - y^2)(x^2 + y^2) \) is equivalent to the given expression.

(A) True

(B) False

62. (Unit 9) \( (x - y)(x + y)(x^2 + y^2) \) is equivalent to the given expression.

(A) True

(B) False

63. (Unit 9) \( (x - y)(x + y)^3 \) is equivalent to the given expression.

(A) True

(B) False
64. (Unit 9) Which of these is NOT a factor of $12x^2 + 6x - 90$?

(A) 6  
(B) $2x$  
(C) $x + 3$  
(D) $2x - 5$

65. (Unit 9) If $(x - 7)$ is a factor of $2x^2 - 11x + k$, what is the value of $k$?

(A) $-21$  
(B) $-7$  
(C) $7$  
(D) $28$

66. (Unit 9) Factor $25x^2 + 4$.

(A) $(5x + 2)(5x - 2)$  
(B) $(5x + 2)^2$  
(C) The expression is not factorable with real coefficients.

67. (Unit 9) Factor $9x^2 - 16$.

(A) $(3x + 4)(3x - 4)$  
(B) $(3x - 4)^2$  
(C) The expression is not factorable with real coefficients.

68. (Unit 9) Which is a factor of $4x^2 - 6x - 40$?

(A) $2x + 5$  
(B) $2x - 5$  
(C) $2x + 4$  
(D) $2x - 4$
69. (Unit 9) Which expression is equivalent to \( x^2 + 3x - 40 \)?

(A) \((x-5)(x+8)\)
(B) \((x-5)(x-8)\)
(C) \((x+5)(x+8)\)
(D) \((x+5)(x-8)\)

70. (Unit 9) Which expression is equivalent to \( 35x^2 + 26x - 16 \)?

(A) \((7x-2)(5x+8)\)
(B) \((7x+2)(5x-8)\)
(C) \((7x-8)(5x+2)\)
(D) \((7x+8)(5x-2)\)

71. (Unit 9) What value of \( c \) makes the expression \( y^2 - 9y + c \) a perfect trinomial square?

(A) \(-9\)
(B) \(-\frac{9}{2}\)
(C) 81
(D) \(\frac{81}{4}\)
For questions 72-74, consider the solutions to the equation \((x+5)(x-3)=0\).

72. (Unit 11) \(x^2 - 15 = 0\) has the same solutions as the given equation.
   (A) True
   (B) False

73. (Unit 11) \(x^2 + 2x - 15 = 0\) has the same solutions as the given equation.
   (A) True
   (B) False

74. (Unit 11) \((x+1)^2 - 14 = 0\) has the same solutions as the given equation.
   (A) True
   (B) False

75. (Unit 9) The expression \(4x^2 + bx - 3\) is factorable into two binomials. Which could NOT equal \(b\)?
   (A) -7
   (B) -1
   (C) 1
   (D) 11

76. (Unit 11) Which quadratic equation has solutions of \(x = 2a\) and \(x = -b\)?
   (A) \(x^2 - 2ab = 0\)
   (B) \(x^2 - x(b-2a) - 2ab = 0\)
   (C) \(x^2 - x(b+2a) + 2ab = 0\)
   (D) \(x^2 + x(b-2a) - 2ab = 0\)
77. (Unit 11) Which equation has roots of 4 and \(-6\)?

(A) \((x-4)(x+6)=0\)
(B) \((x-4)(x-6)=0\)
(C) \((x+4)(x+6)=0\)
(D) \((x+4)(x-6)=0\)

78. (Unit 11) What value(s) of \(x\) make the equation \((x-m)(x-n)=0\) true? (\(m\) and \(n\) do not equal zero.)

(A) \(-m\) and \(-n\)
(B) \(m\) and \(n\)
(C) \(mn\)
(D) 0

79. (Unit 11) Solve the quadratic \(4x^2 = 14x + 8\).

(A) \(x = -2\) or \(x = 1\)
(B) \(x = \frac{-1}{2}\) or \(x = 4\)
(C) \(x = \frac{-1}{7}\) or \(x = 8\)
(D) \(x = 0\) or \(x = \frac{-7}{4}\)

80. (Unit 11) When \(2x^2 + (4-p)x - 2p = 0\), \(x = -2\) is a solution. Which is a factor of \(2x^2 + (4-p)x - 2p\)?

(A) \(2x - p\)
(B) \(2x + p\)
(C) \(4-p\)
81. (Unit 9) Given $4x^2 + 28x + c = (2x + q)^2$, where $c$ and $q$ are integers, what is the value of $c$?

(A) 2
(B) 7
(C) 14
(D) 49

82. (Unit 11) The quadratic equation $2x^2 - 16x - 15 = 0$ is rewritten as $(x - p)^2 = q$. What is the value of $q$?

(A) $\frac{47}{2}$
(B) $\frac{15}{2}$
(C) $\frac{143}{2}$

83. (Unit 11) What number should be added to both sides of the equation to complete the square in $x^2 + 8x = 17$?

(A) 4
(B) 16
(C) 29
(D) 49

84. (Unit 11) Find all solutions to the equation $x^2 - 10x + 25 = 81$. Show your work.

85. (Unit 11) The distance traveled by a dropped object (ignoring air resistance) equals $\frac{1}{2}gt^2$, where $g$ is the acceleration of the object due to gravity and $t$ is the time since it was dropped. If acceleration due to gravity is about 10 m/s², how much time does it take an object to fall 80 meters?

(A) about 3 seconds
(B) about 4 seconds
(C) about 5.5 seconds
For question 86, the quadratic equation \( f(x) = 2x^2 - 3x + c = 0 \) has exactly one real solution.

86. (Unit 11) \( c = \frac{9}{8} \)
   
   (A) True  
   (B) False

87. (Unit 11) How many real solutions does the equation \( x^2 + 4 = 0 \) have?
   
   (A) 0  
   (B) 1  
   (C) 2

88. (Unit 11) How many real solutions does the equation \( 3y^2 = 0 \) have?
   
   (A) 0  
   (B) 1  
   (C) 2

89. (Unit 11) Which shows the correct use of the quadratic formula to find the solutions of \( 8x^2 + 2x = 1 \)?
   
   (A) \( x = \frac{2 \pm \sqrt{(2)^2 - 4(8)(1)}}{2(8)} \)
   
   (B) \( x = \frac{2 \pm \sqrt{(2)^2 - 4(8)(-1)}}{2(8)} \)
   
   (C) \( x = \frac{-2 \pm \sqrt{(2)^2 - 4(8)(1)}}{2(8)} \)
(D) \( x = \frac{-2 \pm \sqrt{(2)^2 - 4(8)(-1)}}{2(8)} \)

90. (Unit 11) A quadratic expression has two factors. One factor is \((2x - 3)\).

In each part below, find another factor of the quadratic, if possible. If the situation described is not possible, explain why.

a) The quadratic has no real zeros.

b) The quadratic has only one real zero.

c) The quadratic has two distinct real zeros.

91. (Unit 11) One way of expressing a quadratic function is \( f(x) = ax^2 + bx + c \). A second way is \( f(x) = a(x-h)^2 + k \).

a) Find \( b \) in terms of \( a, h \), and \( k \).

b) Find \( c \) in terms of \( a, h \), and \( k \).

92. (Unit 11) Which value of \( x \) is a solution to the equation \( x^2 - 3x - 3 = -\frac{3}{5}x + \frac{3}{2} \)?

(A) \( x \approx -0.68 \)

(B) \( x \approx -1.24 \)

(C) \( x \approx 2.50 \)

(D) \( x \approx 3.79 \)

93. (Unit 11) Given \( f(x) = x^2 - 2x + 9 \).

a) Complete the square for \( f(x) \).

b) Using the quadratic formula, explain why the graph of \( y = f(x) \) has no \( x \)-intercepts.
For question 94, the quadratic equation \( f(x) = 2x^2 - 3x + c = 0 \) has exactly one real solution.

94. (Unit 11) \( f(x) \) can be written as a difference of squares.
   
   (A) True
   (B) False

95. (Unit 11) What is the solution set of \(-4x^2 = 5x + 9\)?

   (A) \( \left\{ -1, \frac{-1}{4} \right\} \)
   
   (B) \( \left\{ -1, \frac{9}{4} \right\} \)
   
   (C) \( \left\{ \frac{-5 + \sqrt{119}}{4}, \frac{-5 - \sqrt{119}}{4} \right\} \)
   
   (D) There are no real solutions.

96. (Unit 11) What is the solution set for the equation \( x^2 + 8x + 16 = 49 \)?

   (A) \( \{4, 7\} \)
   
   (B) \( \{-7, -4\} \)
   
   (C) \( \{-11, 3\} \)
   
   (D) \( \{-3, 11\} \)

97. (Unit 11) What are the solutions of \( 3x^2 - 6x = -2 \)?

   (A) \( x = \frac{1 \pm \sqrt{3}}{3} \)
   
   (B) \( x = \frac{-1 \pm \sqrt{3}}{3} \)
   
   (C) \( x = 1 \pm \frac{\sqrt{3}}{3} \)
98. (Unit 11) What is the solution set of the equation \( 36x^2 - 25 = 0 \)?

(A) \( \left\{ \frac{5}{6} \right\} \)

(B) \( \left\{ \frac{25}{36} \right\} \)

(C) \( \left\{ -\frac{5}{6}, \frac{5}{6} \right\} \)

(D) \( \left\{ -\frac{25}{36}, \frac{25}{36} \right\} \)

For questions 99-100, use the scenario below.

A rectangular playground is built such that its length is twice its width.

99. (Unit 11) The area of the playground can be expressed as \( 2w^2 \).

(A) True

(B) False

100. (Unit 11) The perimeter of the playground can be expressed as \( 4w^4 \).
101. (Unit 11) Use the figure below.

![Triangle diagram]

The length of the triangle’s base $b$ is twice its height $h$.

(a) What are the approximate lengths of the base and height when the triangle’s area is $25 \text{ m}^2$?

(b) A similar triangle has a height whose measure (in feet) is a positive integer. What could its area be?

102. (Unit 11) The braking distance $d$, in feet, for a car can be modeled by $d = \frac{3(s^2 + 10s)}{40}$, where $s$ is the speed of the car in miles per hour. What is the fastest speed that a car can be moving so that braking distance does not exceed 150 feet? Show your work.

103. (Unit 11) The figure below shows a proposed sand pit, an area in a park that will be filled with sand.

![Sand pit diagram]
The sand pit is to be a large rectangular area twice as long as it is wide, plus a smaller rectangular area 3 feet long and as wide as the large area. The two areas share a common side.

(a) Write an expression for the total perimeter of the sand pit as a function of \( x \).

(b) Write an expression for the total area of the sand pit as a function of \( x \).

(c) The sand in the pit is to be 3 inches deep throughout. The park has 40 cubic feet of sand available. What will be the approximate dimensions of the sand pit?

(d) The pit is to be bordered by a chain link fence. How much fencing is needed?

104. (Unit 11) A farmer can grow about 10,000 bushels of soybeans on a plot of land 1 kilometer by 1 kilometer.

(a) Write a function that shows how many bushels of soybeans the farmer can grow on a plot of land \( x \) kilometers by \( x \) kilometers.

(b) The price per bushel is \( p \) dollars per bushel. Write a function that shows how much money can be earned from a plot of land \( x \) kilometers by \( x \) kilometers.

(c) Last year, a farmer sold $960,000 of soybeans at $15/bushel. What would be the dimensions of a square field that produced this sale of soybeans?

In questions 105-107, use the graph below. The graph shows the height \( h \) above the ground (in meters) of a thrown ball as a function of time (in seconds).

![](image)

105. (Unit 11) The ball hits the ground 3 seconds after it is thrown.

(A) True

(B) False
106. (Unit 11) Height begins decreasing as soon as the ball is thrown ($t = 0$).

   (A) True
   (B) False

107. (Unit 11) The domain of the function that describes the height of the ball is all real numbers.

   (A) True
   (B) False

108. (Unit 11) A scientist drops an object from the top of a 80-foot building. The scientist uses a stopwatch to measure the time between when it was dropped and when it hits the ground. The height of the object above ground as a function of time is given by $h(t) = 80 - 16t^2$. Which is the domain of this function?

   (A) $t$ can be any real number.
   (B) $t$ can be any positive real number.
   (C) $t$ can be any real number between 0 and 80, inclusive.
   (D) $t$ can be any real number between 0 and $\sqrt{5}$, inclusive.

In questions 109-111, use the diagram and scenario below.

A cannonball is shot from the top of an ocean cliff as shown. The height (in meters) of the cannonball above the water is given by $h(t) = -5t^2 + 15t + 8$, where $t$ is the number of seconds after the shot.

109. (Unit 11) The cannon is 8 meters above the water.

   (A) True
   (B) False
110. (Unit 11) The cannonball reaches its maximum height at 1.5 seconds after it is shot.

   (A) True
   (B) False

111. (Unit 11) The cannonball hits the water 8 seconds after it is shot.

   (A) True
   (B) False

112. (9.9) A company produces toy trains. The cost \( C \) of producing \( t \) trains is given by the equation \( C = 300 + 15t \). Which shows the number of trains that can be produced for a given cost?

   \( t = -300 + 15C \)

   (B) \( t = 300 - 15C \)

   (C) \( t = -300 + \frac{1}{15}C \)

   (D) \( t = -20 + \frac{1}{15}C \)

113. (Unit 11) The surface area of a hemisphere with radius \( r \) is given by \( A_H = 2\pi r^2 \).

   The lateral surface area of a cylinder with radius \( r \) and height \( h \) is given by \( A_L = 2\pi rh \).

   A “capsule” is composed of two hemispheres attached to a cylinder with a common radius. In this capsule, the height of the cylinder is 7 times its radius.

   (a) Create a function \( C(r) \) that describes the surface area of the capsule.

   (b) What is the radius of a capsule with a surface area of 2.3 cm\(^2\)?

114. (Unit 10) The graph of \( y = x^2 - 3x + 6 \) has how many \( x \)-intercepts?

   (A) 0
   (B) 1
   (C) 2
115. (Unit 10) Which quadratic function’s graph is symmetric about the line \( x = 3 \)?

(A) \( y = x^2 - 6x + 2 \)  
(B) \( y = 3x^2 + x - 7 \)  
(C) \( y = x^2 - 3x + 5 \)  
(D) \( y = 2x^2 + 12x - 1 \)

116. (Unit 10) What are the domain and range of the function \( y = x^2 - 6x + 8 \) shown in the graph below?

(A) Domain: all real numbers  
    Range: \( y \geq -1 \)  

(B) Domain: all real numbers  
    Range: all real numbers  

(C) Domain: \( 2 \leq x \leq 4 \)  
    Range: \( y \geq -1 \)  

(D) Domain: \( 2 \leq x \leq 4 \)  
    Range: all real numbers
117. (Unit 10) Which of the following is the graph of \( y = -x^2 + 4x - 5 \)?

(A) ![Graph A](image1)

(B) ![Graph B](image2)

(C) ![Graph C](image3)

(D) ![Graph D](image4)
118. (Unit 10) A quadratic function is given by $h(x) = ax^2 + bx + c$, where $a$ and $c$ are negative real numbers. Which of these could be the graph of $y = h(x)$?

(A) ![Graph A](image)

(B) ![Graph B](image)

(C) ![Graph C](image)

(D) ![Graph D](image)
119. (Unit 10) Which is the graph of \( f(x) = x^2 + 2x - 3 \)?

(A) \[ \begin{array}{c}
\text{Graph} \\
\end{array} \]

(B) \[ \begin{array}{c}
\text{Graph} \\
\end{array} \]

(C) \[ \begin{array}{c}
\text{Graph} \\
\end{array} \]

(D) \[ \begin{array}{c}
\text{Graph} \\
\end{array} \]
120. (Unit 10) Use the graph.

Which equation is represented the following graph?

(A) \( y = x^2 - x - 6 \)
(B) \( y = x^2 - x + 6 \)
(C) \( y = x^2 + x - 6 \)
(D) \( y = x^2 + x + 6 \)

For questions 121-122, consider the graph of \( y = 4x^2 - 5x - 4 \).  

121. (Unit 10) The graph opens up.

(A) True  
(B) False
122. (Unit 10) The axis of symmetry is at $x = -\frac{5}{8}$.

(A) True  
(B) False

123. (Unit 10) What is the vertex of the parabola in the given equation?

$$y = -3x^2 + 12x - 5$$

(A) $(-2, -41)$  
(B) $(2, 7)$  
(C) $(2, 55)$  
(D) $(6, -41)$

124. (Unit 10) The table below is of the quadratic $f(x)$.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$f(x)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3</td>
<td>0</td>
</tr>
<tr>
<td>-2</td>
<td>-9</td>
</tr>
<tr>
<td>-1</td>
<td>-12</td>
</tr>
<tr>
<td>0</td>
<td>-9</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>

A second quadratic is defined as $g(x) = x^2 - 6x - 5$.

Which is true about the two functions’ minimum values?

(A) $f(x)$ has a smaller minimum value.  
(B) $g(x)$ has a smaller minimum value.  
(C) The minimum values of $f(x)$ and $g(x)$ are equal.  
(D) Which function has the smaller minimum cannot be determined from the information given.
125. (Unit 10) Use the function $f(x) = -2x^2 - 2x + 1$. 

Show all work.

(a) Identify the intercepts.
(b) Identify the axis of symmetry.
(c) Determine the coordinates of the vertex.
(d) Sketch the graph.
(e) State the domain and range.

126. (Unit 10) Where is the axis of symmetry in the quadratic $f(x) = 3(x-9)(x+5)$?

(A) $x = 4$
(B) $x = 2$
(C) $x = 6$
(D) $x = -2$

In questions 127-128, consider a quadratic $y = f(x)$ that has $x$-intercepts at $(r, 0)$ and $(s, 0)$, and a $y$-intercept at $(0, c)$.

127. (Unit 10) The function $y = f(x)$ has an axis of symmetry at $x = \frac{r+s}{2}$.

(A) True
(B) False

128. (Unit 10) The function $y = f(x+2)$ has $x$-intercepts at $(r+2, 0)$ and $(s+2, 0)$.

(A) True
(B) False
129. (Unit 10) Look at the graph of the quadratic \( f(x) \) below.

The graph of \( g(x) = 3x^2 + bx - 24 \) has the same \( x \)-intercepts.

What is the value of \( b \)?

(A) –6  
(B) –2  
(C) 1  
(D) 14

130. (Unit 10) A quadratic function is defined as \( y = (x+4)^2 - 7 \). Which statement is true?

(A) The parabola has a maximum value of –7.  
(B) The parabola has a minimum value of –7.  
(C) The parabola has a maximum value of –4.
(D) The parabola has a minimum value of \(-4\).

131. (Unit 10) Use the graph below.

Which equation could define the given parabola, where \(a\) is a positive real number?

(A) \(f(x) = a(x-2)^2 - 3\)

(B) \(f(x) = a(x+2)^2 - 3\)

(C) \(f(x) = a(x-2)^2 + 3\)

(D) \(f(x) = a(x+2)^2 + 3\)
132. (Unit 10) Use the graph below.

(a) What is the equation of the function shown?
(b) Find the $x$-intercepts of the function.
(c) What is the average rate of change of the function between the two points identified on the graph?

133. (Unit 10) Define and sketch the three quadratic functions that have the following characteristics.

(a) $f$ has an axis of symmetry at $x = 2$ and no $x$-intercepts.
(b) $g$ has a $y$-intercept at 3 and opens downward.
(c) $h$ has a zero at $x = -2$ and a minimum value of $-6$.

134. (Unit 10) A parabola is defined as $f(x)=a(x-3)^2+10$, where $a$ is a positive real number. As $a$ increases, what happens to the $y$-coordinate of the parabola’s vertex?
(A) it decreases
(B) it increases
(C) it does not change

135. (Unit 10) A parabola is defined as \( f(x) = a(x - 3)^2 + 10 \), where \( a \) is a positive real number. As \( a \) increases, what happens to the \( y \)-coordinate of the parabola’s \( y \)-intercept?

(A) it decreases
(B) it increases
(C) it does not change

136. (Unit 10) The table below is of a quadratic function, \( g(x) \), where \( x \) is measured in seconds and \( g(x) \) is measured in meters.

<table>
<thead>
<tr>
<th>( x )</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>( g(x) )</td>
<td>2.3</td>
<td>-1.0</td>
<td>1.7</td>
<td>10.4</td>
<td>25.1</td>
</tr>
</tbody>
</table>

What is the approximate rate of change over the interval \( 0 \leq x \leq 4 \)?

(A) 22.8 m/s
(B) 8.7 m/s
(C) 6.3 m/s
(D) 5.7 m/s

137. (Unit 10) Use the graph.
Which equation defines this set of parabolas?

(A) \( y = kx^2 + 1 \)

(B) \( y = \frac{1}{k}x^2 + 1 \)

(C) \( y = x^2 + k \)

In questions 138-139, consider a quadratic function \( y = f(x) \) that has \( x \)-intercepts at \((r, 0)\) and \((s, 0)\), and a \( y \)-intercept at \((0, c)\).

138. (Unit 10) The function \( y = f(x) - 2 \) has a \( y \)-intercept at \((0, c - 2)\).

(A) True

(B) False

139. (Unit 10) If \( y = f(x) \) opens upward, then \( y = -f(x) \) opens downward.

(A) True

(B) False
140. (Unit 10) Answer each part.

(a) Factor completely: \(2x^2 + 4x - 16\)

(b) Solve: \(2x^2 + 4x - 16 = 0\)

(c) Graph \(f(x) = 2x^2 + 4x - 16\), and label key points and the axis of symmetry.

(d) Solve the system \(y = f(x)\) and \(y = -2x - 8\).

141. (Unit 11) Solve the system of equations.

\[
\begin{align*}
y &= (x+4)^2 - 6 \\
-2x + y &= 5
\end{align*}
\]

(A) \((-4, 6)\)

(B) \((0, 5)\)

(C) \((-5, -5)\) and \((-1, 3)\)

(D) \((-5, -5)\)

For questions 142-143, use the table below.

<table>
<thead>
<tr>
<th></th>
<th>(-4)</th>
<th>(-3)</th>
<th>(-2)</th>
<th>(-1)</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(f(x))</td>
<td>-23</td>
<td>-10</td>
<td>-3</td>
<td>-2</td>
<td>-7</td>
<td>-18</td>
</tr>
<tr>
<td>(g(x))</td>
<td>-13</td>
<td>-11.5</td>
<td>-10</td>
<td>-8.5</td>
<td>-7</td>
<td>-5.5</td>
</tr>
</tbody>
</table>

142. (Unit 11) \(f(x) = g(x)\) at \((0, -7)\).

(A) True

(B) False

143. (Unit 11) \(f(x) = g(x)\) somewhere on the interval \(-3 < x < -2\).

(A) True
144. (Unit 11) The parabola $y = x^2 - 9$ and the line $y = -8x$ intersect at two points. Which equation would be useful to find these points?

(A) $(−8x)^2 − 9 = 0$
(B) $−8(x^2 − 9) = 0$
(C) $x^2 + 8x − 9 = 0$
(D) $x^2 − 8x − 9 = 0$

55. (Unit 12) A function $f(x)$ takes values of $x$ and applies the following:

Step 1) divide $x$ by 5
Step 2) subtract 3 from the result in Step 1

Which of these describes the inverse function of $f(x)$?

(A) Step 1) multiply $x$ by 5
   Step 2) add 3 to the result in Step 1
(B) Step 1) subtract 3 from $x$
   Step 2) divide the result in Step 1 by 5
(C) Step 1) add 3 to $x$
   Step 2) multiply the result in Step 1 by 5
(D) Step 1) divide $x$ by $\frac{1}{5}$

Step 2) subtract $-3$ from the result in Step 1

56. (Unit 12) Which graph represents the piecewise function?

$$f(x) = \begin{cases} 
3x + 2, & x < -2 \\
\frac{-1}{2}x + 3, & x \geq -2 
\end{cases}$$
57. (Unit 12) An online retailer charges shipping based on the following table.

<table>
<thead>
<tr>
<th>Weight of Order</th>
<th>Shipping Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 lb. – less than 1 lb.</td>
<td>$2.50</td>
</tr>
<tr>
<td>1 lb. – less than 2 lb.</td>
<td>$3.00</td>
</tr>
<tr>
<td>2 lb. – less than 3 lb.</td>
<td>$3.50</td>
</tr>
<tr>
<td>3 lb. – less than 4 lb.</td>
<td>$4.00</td>
</tr>
<tr>
<td>etc.</td>
<td>etc.</td>
</tr>
</tbody>
</table>

(a) Write an equation that describes shipping as a function of weight.

(b) Sketch the function.

58. (Unit 12) A piecewise function is defined as \( f(x) = \begin{cases} x - 2, & \text{for } x \geq 0 \\ -x - 2, & \text{for } x < 0 \end{cases} \). Which is another way of defining this function?

(A) \( f(x) = |x - 2| \)

(B) \( f(x) = |x| - 2 \)
59. (Unit 12) The postage for a letter is $0.45 for letter weights up to and including one ounce. For each additional ounce, or portion of an ounce, another $0.20 is charged. Which graph represents the postage of a letter weighing $x$ ounces?

(A) \( f(x) = -(x-2) \)

(B) \( f(x) = -2x + 2 \)

(C) \( f(x) = -(x-2) \)

(D) \( f(x) = -x + 2 \)

60. (Unit 12) Taxi fare in Las Vegas is $3.30 plus $0.35 for every \( \frac{1}{7} \) of a mile or fraction thereof. Which graph shows the cost of a Las Vegas taxi ride of $x$ miles?
61. (Unit 12) Use the graph.
What is the equation of the function?

(A) \( y = x \)

(B) \( y = |x| \)

(C) \( y = [x] \)

(D) \( y = x - 1 \)