1. Shirley is paid an annual salary plus a bonus of 4% of her sales over \$15,000. Let x represent Shirley's sales, $f(x) = x - 15{,}000$ represent her sales over \$15,000, and $p(x)$ represent the amount of her bonus. Which function notation expresses the amount of her bonus?

A $f(x) + p(x)$

B $f(x) - p(x)$

C $f\big(p(x)\big)$

D $p\big(f(x)\big)$

---

2. What is the inverse function for the exponential function which includes the points shown in the table below?

x	1	2	3	4	5
f(x)	5	25	125	625	3,125

A $f^{-1}(x) = \log_5 x^2$

B $f^{-1}(x) = 5\log_5 x$

C $f^{-1}(x) = \log_5 2x$

D $f^{-1}(x) = \log_5 x$

3. If $f(x) = x^2 - x$ and $g(x) = x - 1$, what is $f(g(x))$?

A $x^2 - x - 1$

B $x^2 - x - 2$

C $x^2 - 3x + 2$

D $x^2 - 3x + 1$

4. A car insurance company has a special plan for safe drivers. For each year that a driver has no tickets or violations, the premium is reduced by 10%, and a credit of \$15.00 is awarded. Which equation shows the amount a driver with no tickets or violations owes in the $(n+1)$th year as a function of the amount owed in the nth year?

A $f(n+1) = f(n) - 0.10\,f(n) - 15$

B $f(n+1) = f(n) + 0.10\,f(n) + 15$

C $f(n+1) = f(n) + 0.10\,f(n) - 15$

D $f(n+1) = f(n) - 0.10\,f(n) + 15$

5. Consider the function $f(x) = ax^2 - 5$, where $a \neq 0$. What is the effect on the graph of f as the absolute value of a decreases?

A The graph shifts left.

B The graph shifts right.

C The graph narrows.

D The graph widens.

6. A company found that its monthly profit, P, is given by $P = {}^{-}10x^2 + 120x - 150$ where x is the selling price for each unit of the product. Which of the following is the ***best*** estimate of the maximum price per unit that the company can charge without losing money?

A \$300

B \$210

C \$11

D \$6

7. What is the nature of the roots of the equation $5n^2 = 4n + 6$?

A two imaginary roots

B one real, rational root

C two real, irrational roots

D two real, rational roots

8. If $3 + 2i$ is a solution for $x^2 + mx + n = 0$, where m and n are real numbers, what is the value of m?

A $^-13$

B $^-6$

C 6

D 13

9. What are the roots of the equation $3x^2 - x + 2 = 0$?

A $\left\{1, \frac{^-2}{3}\right\}$

B $\left\{3, ^-2\right\}$

C $\left\{\frac{1+5i}{6}, \frac{1-5i}{6}\right\}$

D $\left\{\frac{1+i\sqrt{23}}{6}, \frac{1-i\sqrt{23}}{6}\right\}$

10. James purchased a truck for $25,900. The value of the truck decreases by 12% per year. What will be the ***approximate*** value 8 years after the purchase?

A $3,100

B $7,200

C $9,300

D $22,800

11. The Wongs bought a new house three years ago for $92,000. The house is now worth about $113,000. Assuming a steady annual percentage growth rate, ***approximately*** what was the yearly rate of appreciation?

A 7.1%

B 18.6%

C 22.8%

D 61%

12. An exponential growth formula is $N = N_0 e^{kt}$, where:

    N is the population at time t,
    N_0 is the initial population,
    k is the growth rate, and
    t is the time in years.

    The enrollment of a school has been increasing exponentially at a rate of 1.5% per year. The school's enrollment now is 1,800. ***Approximately*** how long ago was the school's enrollment 1,200?

    A 27 years

    B 20 years

    C 12 years

    D 3 years

13. A town's population has been increasing exponentially since 1980. The population grew from 38,032 in 1980 to 51,112 in 1990. If t represents the number of years since 1980, which equation models the growth of the population, P?

    A $P = 51{,}112(0.03)^t$

    B $P = 51{,}112(0.97)^t$

    C $P = 38{,}032(1.34)^t$

    D $P = 38{,}032(1.03)^t$

14. The equation $c = 523{,}430(1.193)^t$ models the pounds of U.S. copper produced in the period from 1987 to 1992. Which statement ***best*** interprets the coefficient and base of this equation?

    A The copper production in 1987 was 523,430 pounds, and it increased at a rate of 1.93% per year during that period.

    B The copper production in 1987 was 523,430 pounds, and it increased at a rate of 19.3% per year during that period.

    C The copper production increased by a factor of $523{,}430 \times 1.193$ pounds per year during that period.

    D The copper production at the beginning of 1987 was at 1.193 pounds, and it increased by a factor of 523,430 pounds per year during that period.

15. Isabella invested \$500 at 6% annual interest, compounded quarterly. The value, A, of an investment can be calculated using the equation $A = P\left(1 + \frac{r}{n}\right)^{nt}$, where P is the initial investment, r is the interest rate, n is the number of times the interest is compounded each year, and t is time in years. Exactly how long will it take for her investment to be worth four times as much (quadruple) in value?

A $t = \dfrac{\log 500}{4 \log 1.06}$

B $t = \dfrac{\log 500}{4 \log 0.265}$

C $t = \dfrac{4 \log 4}{\log 1.015}$

D $t = \dfrac{\log 4}{4 \log 1.015}$

16. The half-life of a radioactive isotope is 7 years. Initially, there are 100 grams of the isotope. Which expression shows the amount of the isotope remaining after x years?

A $100(0.5)^{x-7}$

B $100(0.5)^{7x}$

C $100(0.5)^{x}$

D $100(0.5)^{\frac{x}{7}}$

17. A ball is tossed from the top of a building. This table shows the height, h (in feet), of the ball above the ground t seconds after being tossed.

t	1	2	3	4	5	6
h	299	311	291	239	155	39

According to a quadratic best-fit model of the data, how long after the ball was tossed was it 80 feet above the ground?

A about 5.1 seconds

B about 5.4 seconds

C about 5.7 seconds

D about 5.9 seconds

---

18. A scientist recorded the growth (g) of pine trees and the amount of rainfall (r) they received in their first year.

r (in.)	0	3	5	12	17	22	34	35	45
g (in.)	1	4	6	9.5	10.8	10.9	6	5.3	1

Which equation ***best*** fits the data?

A $g = {}^{-}0.017r + 6.38$

B $g = {}^{-}0.019r^2 + 0.797r + 1.94$

C $g = 5.02\,(0.995)^r$

D $g = {}^{-}0.092r^2 + 1.62r + 2.51$

19. The table below shows the total sales for a new product during the first five years of production.

Year	**Sales** (thousands of $)
1	2
2	6
3	11
4	29
5	68

According to the best-fit exponential model, what was the ***approximate*** annual rate of growth in sales during this period?

A 91%

B 137%

C 191%

D 237%

20. The chart below shows the weight of fish (in thousands of pounds) caught in area lakes for six consecutive years.

Elapsed Time, *t* (years)	**Weight** (thousands of pounds)
0	13.7
1	14.6
2	15.5
3	15.1
4	14.2
5	12.4

Based on the best-fit quadratic model, at which value of t will the amount of fish caught be ***approximately*** 6,700 pounds?

A 6

B 7

C 8

D 9

21. The table below shows the value of an investment fund.

Time, *t* (years)	**Value of Fund**
3	\$15,700
5	\$18,400
7	\$21,400
9	\$25,000
11	\$29,100
13	\$34,200
15	\$39,700

For what ***approximate*** value of t will the value of the fund be \$50,000? (Assume that the fund growth continues according to a best-fit exponential model based on the data in the table.)

A 18

B 19

C 20

D 21

22. The table below shows the cost of attending a private school for the years 1997–2001. Let $x = 0$ in 1997.

Year	**Cost** (dollars)
1997	17,500
1998	18,000
1999	19,000
2000	20,000
2001	22,000

Which equation ***best*** represents the cost of the school?

A $y = 1{,}100x + 17{,}100$

B $y = 214x - 70.3$

C $y = 214.3x^2 + 242.9x + 17{,}528.6$

D $y = {}^{-}1.5x^2 - 70.3x$

---

23. The table shows the growth of a certain bacteria.

Time in Hours, x	0	1	2	3	4	5
Number of Cells, N	50	71	100	141	200	283

If N represents the number of cells at time x, which equation ***best*** models this set of data?

A $N = 45.51x + 27.05$

B $N = 27.05x + 45.51$

C $N = (1.41)(50.06)^x$

D $N = (50.06)(1.41)^x$

24. In which direction must the graph of $y = \frac{1}{x}$ be shifted to produce the graph of $y = \frac{1}{x+2}$?

A up

B down

C right

D left

25. Which point is an x-intercept of $f(x) = \frac{4x+1}{x^2-1}$?

A $(^-1, 0)$

B $(^-0.25, 0)$

C $(0.25, 0)$

D $(1, 0)$

26. Solve: $\frac{3}{x^2+x-2} + \frac{3}{x-1} = \frac{1}{x+2}$

A $\{^-3\}$

B $\{^-5\}$

C $\{2\}$

D $\{5\}$

27. Consider $f(x) = \frac{1}{x+2}$, and $g(x) = \frac{1}{x+3}$. Which translation will transform the graph of $f(x)$ into the graph of $g(x)$?

A shift 1 unit right

B shift 1 unit left

C shift 1 unit down

D shift 1 unit up

28. Which of the following is a horizontal asymptote of $f(x) = \frac{1}{x^2-16}$?

A $x = {}^-4$

B $y = 4$

C $x = 1$

D $y = 0$

29. The graph of $g(x) = x^3 - 9x^2 + 3x - 1$ is translated up 5 units to produce the graph of the function $h(x)$. Which of the following could be $h(x)$?

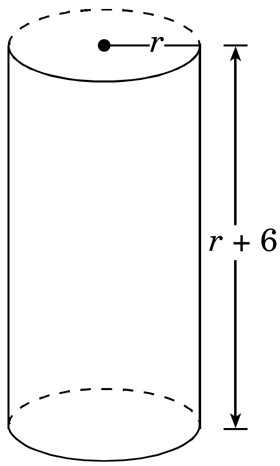
A $h(x) = x^3 - 9x^2 + 3x - 5$

B $h(x) = x^3 - 9x^2 + 3x - 4$

C $h(x) = x^3 - 9x^2 + 3x + 4$

D $h(x) = x^3 - 9x^2 + 3x + 5$

30. The height of a cylinder is 6 ft greater than the radius. The volume of a cylinder is given by the formula $V = \pi r^2 h$.



If the total volume of the cylinder is 60 ft^3, what is the ***approximate*** radius of the cylinder?

A 1.6 ft

B 1.7 ft

C 2.0 ft

D 2.3 ft

31. The function $f(x) = x^3 - 5x^2 - 2x + 24$ is positive for what parts of its domain?

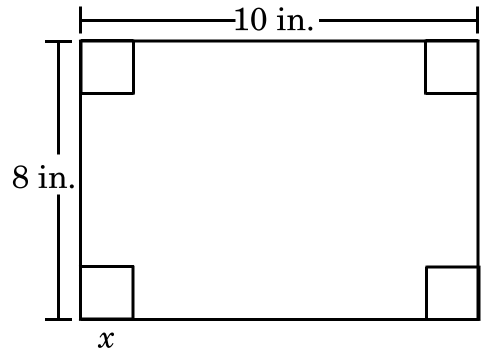
A $^-2 \le x \le 3$ or $x \ge 4$

B $^-2 < x < 3$ or $x > 4$

C $x \le {}^-2$ or $3 \le x \le 4$

D $x < {}^-2$ or $3 < x < 4$

32. An open box is made from an 8-by-10-inch rectangular piece of cardboard by cutting squares from each corner and folding up the sides.



If x represents the side length of the squares, which of the following is a function giving the volume $V(x)$ of the box in terms of x?

A $V(x) = 80 - 18x + x^2$

B $V(x) = 80 - 36x + 4x^2$

C $V(x) = 80x - 18x^2 + x^3$

D $V(x) = 80x - 36x^2 + 4x^3$

33. Mr. Greene has 8.5-by-11 in. cardboard sheets. As a class project, Mr. Greene asked each of his students to make an open-top box under these conditions:

I) Each box must be made by cutting small squares from each corner of a cardboard sheet.

II) The box must have a volume of 48 in^3.

III) The amount of cardboard waste must be minimized.

What is the ***approximate*** side length for the small squares that would be cut from the cardboard sheet?

A 3.65 in.

B 2.66 in.

C 0.71 in.

D 0.57 in.

34. What is the domain of the function $f(x) = \sqrt{x^2 - 3x - 10}$?

A $^-2 \leq x \leq 5$

B $x \leq {}^-2$ or $x \geq 5$

C $x \geq 5$

D $x \geq {}^-2$

35. The point $(3, 4)$ lies on the graph of $f(x) = \sqrt{2x + a}$. Which ordered pair below lies on the graph of $g(x) = \frac{1}{2}\sqrt{2x + a}$?

A $\left(\frac{3}{2}, 2\right)$

B $\left(\frac{5}{2}, \frac{3}{2}\right)$

C $(3, 2)$

D $(27, 8)$

36. Solve: $\sqrt{x+5} + \sqrt{x-3} = 4$

A $\{4\}$

B $\left\{\frac{1}{4}, 1\right\}$

C $\{^-1, 4\}$

D no solution

37. Solve: $|2x - 1| - 2 = 7$

A $\{5, {}^{-}4\}$

B $\{5, {}^{-}2\}$

C $\{2, {}^{-}5\}$

D $\{2, {}^{-}2\}$

38. A survey of a large number of high school students reported that 18.6% read the newspaper. Results of surveys of this size can be off by as much as 1.5 percentage points. Which inequality describes the actual percent of students that read the newspaper, x?

A $x - 0.186 \leq 0.015$

B $x - 0.186 > 0.015$

C $|x - 0.186| \leq 0.015$

D $|x - 0.186| > 0.015$

39. How do the graphs of $f(x) = x^2 + x$ and $g(x) = x^2 + |x|$ compare?

A $f(x) = g(x)$ for $x < 0$

B $f(x) > g(x)$ for $x < 0$

C $f(x) = g(x)$ for $x \geq 0$

D $f(x) > g(x)$ for $x \geq 0$

40. For $y = 3|7 - 2x| + 5$, which set describes x when $y < 8$?

A $\{x | 3 < x < 4\}$

B $\{x | 3 < x < 10\}$

C $\{x | x < 3 \text{ or } x > 4\}$

D $\{x | x < 3 \text{ or } x > 10\}$

41. At what x-coordinate does $f(x) = |{}^{-}2x + 3| - 2$ have its minimum value?

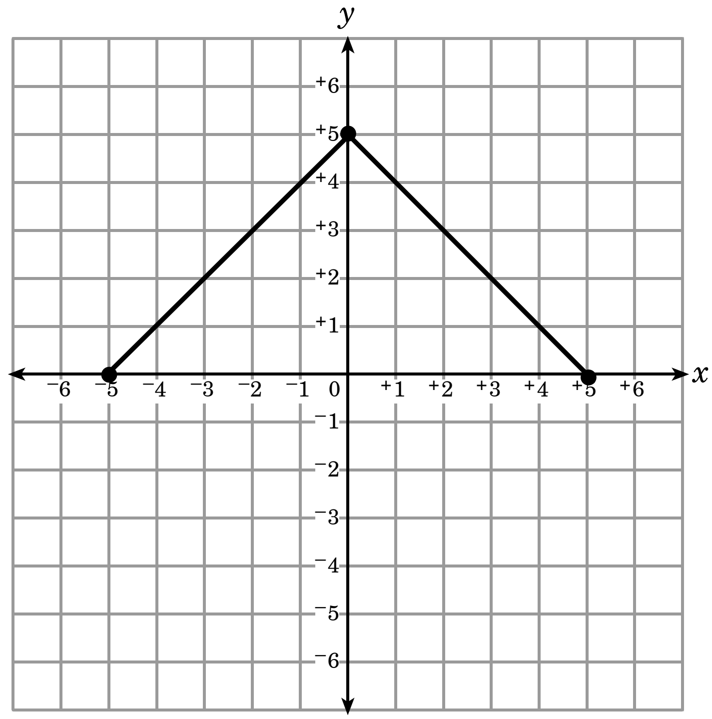
A ${}^{-}2$

B $\frac{{}^{-}2}{3}$

C $\frac{3}{2}$

D 3

42. Which function is graphed below?



A $y = |x| - 5$

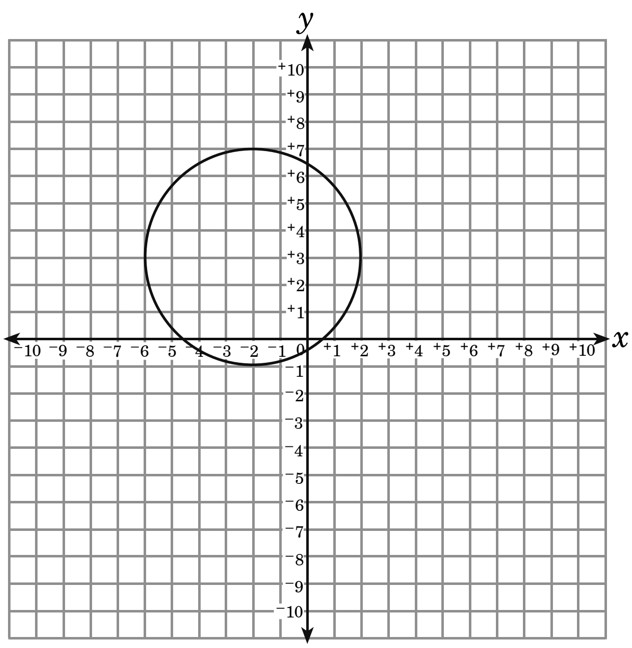
B $y = 5 - |x|$

C $y = |{}^{-}5x|$

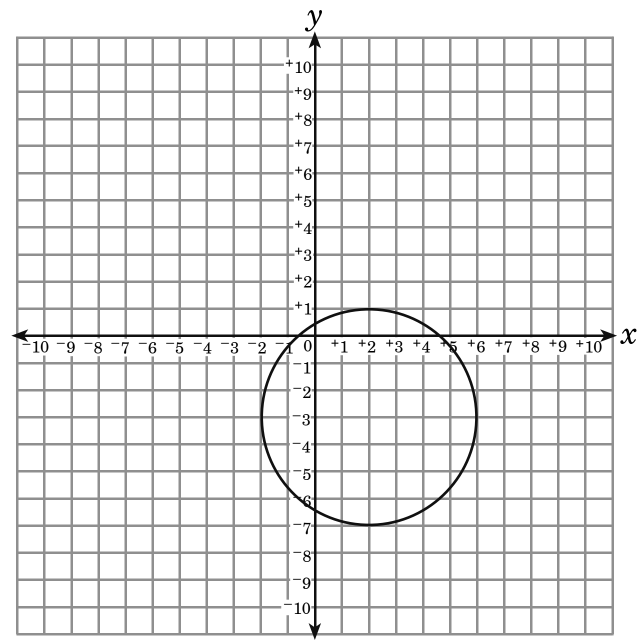
D $y = |5 - x|$

43. Which is the graph of a circle with equation $x^2 + 4x + y^2 - 6y = 3$?

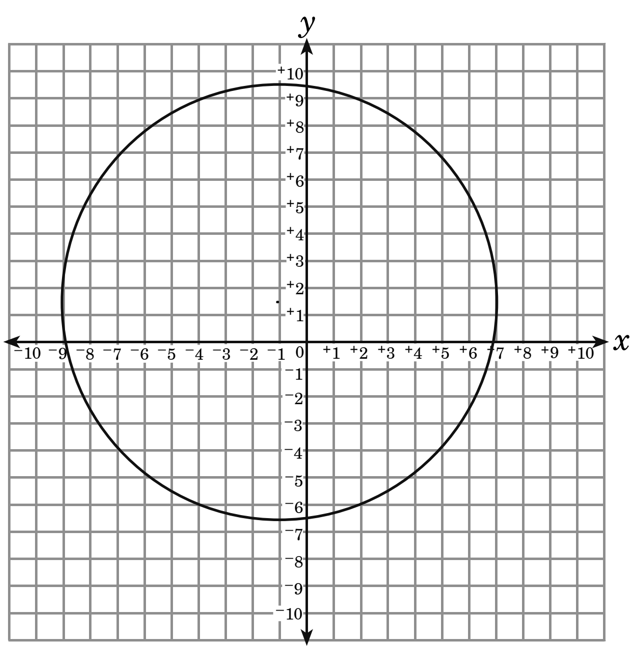
A



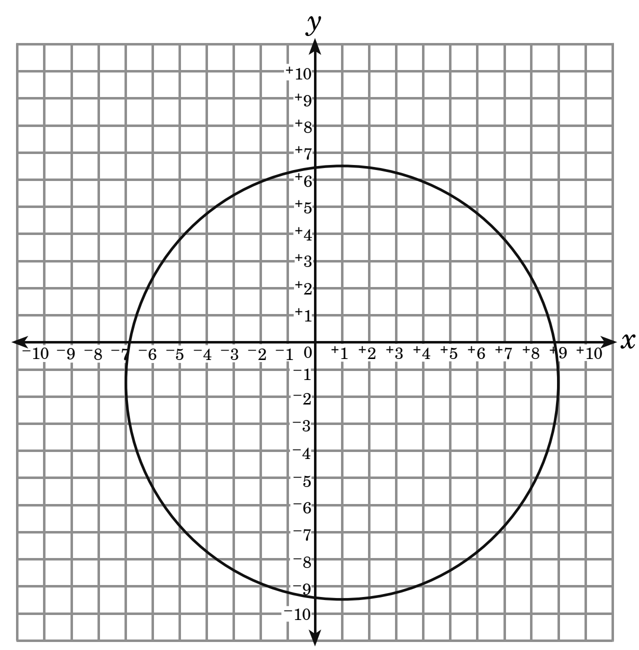
B



C



D



44. Which is an equation for the parabola that has vertex $\left({}^{-}2, 3\right)$ and passes through the point $\left({}^{-}1, 5\right)$?

A $y = x^2 + 4x + 7$

B $y = x^2 - 4x + 7$

C $y = 2x^2 - 8x + 11$

D $y = 2x^2 + 8x + 11$

45. The endpoints of a diameter of a circle are $\left({}^{-}4, 7\right)$ and $\left(2, {}^{-}1\right)$. What is the equation of the circle in standard form?

A $(x - 1)^2 + (y + 3)^2 = 25$

B $(x + 1)^2 + (y - 3)^2 = 25$

C $(x - 1)^2 + (y + 3)^2 = 100$

D $(x + 1)^2 + (y - 3)^2 = 100$

46. Which equation is equivalent to $y = 3x^2 + 6x + 5$?

A $y = 3(x + 3)^2 - 9$

B $y = 3(x + 3)^2 - 4$

C $y = 3(x + 1)^2 + 4$

D $y = 3(x + 1)^2 + 2$

47. A circle with equation $(x - 4)^2 + (y + 2)^2 = 12$ is translated 6 units to the left and 3 units up. What is the equation of the new circle?

A $(x + 2)^2 + (y - 1)^2 = 12$

B $(x - 2)^2 + (y + 5)^2 = 12$

C $(x + 10)^2 + (y - 1)^2 = 12$

D $(x - 10)^2 + (y + 5)^2 = 12$

48. Given the system:

$$\begin{aligned} 2x - 3y + 4z &= 21 \\ 5x + 6y + 8z &= 10 \\ z &= x + y \end{aligned}$$

What is the value of x?

A 0

B 4

C $\frac{125}{56}$

D $\frac{522}{17}$

49. What is the value of z in the solution of this system?

$$\begin{aligned} 2x + 3y + 2z &= 2 \\ x - 4y + 6z &= {}^{-}25 \\ 3x + 5y - 4z &= 25 \end{aligned}$$

A $^{-}5$

B $^{-}3$

C 1

D 2

50. A pizza parlor charges price x for a slice of pizza and price y for a drink. Two slices of pizza and one drink cost Mary Ann \$4.50. Three slices and two drinks cost Elmo \$7.25. Which matrix could be multiplied by $\begin{bmatrix} 4.50 \\ 7.25 \end{bmatrix}$ to find x and y?

A $\begin{bmatrix} {}^{-}1 & 1 \\ 2 & {}^{-}1 \end{bmatrix}$

B $\begin{bmatrix} 2 & {}^{-}1 \\ {}^{-}3 & 2 \end{bmatrix}$

C $\begin{bmatrix} 1 & 2 \\ {}^{-}1 & 3 \end{bmatrix}$

D $\begin{bmatrix} 1 & {}^{-}1 \\ {}^{-}1 & 2 \end{bmatrix}$

51. Solve: $y = 3x^2 + 3$
$y = 5 - 5x$

A $\left\{\left(\frac{1}{3}, \frac{10}{3}\right), (2, 15)\right\}$

B $\left\{\left(\frac{1}{3}, \frac{10}{3}\right), (^-2, 15)\right\}$

C $\left\{\left(^-\frac{1}{3}, \frac{20}{3}\right), (2, {}^-5)\right\}$

D $\left\{\left(^-\frac{1}{3}, \frac{10}{3}\right), (^-2, {}^-5)\right\}$

52. A total of \$253.00 is collected for tickets from 14 adults and 54 children. The price of an adult's ticket is \$3.50 more than the price of a child's ticket. Which equation is a correct matrix set-up to find the prices of an adult ticket (x) and a child ticket (y)?

A $\begin{bmatrix} 1 & ^-1 \\ 14 & 54 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 3.50 \\ 253 \end{bmatrix}$

B $\begin{bmatrix} 1 & 1 \\ 14 & 54 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 3.50 \\ 253 \end{bmatrix}$

C $\begin{bmatrix} 14 & 54 \\ 1 & 3.50 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 68 \\ 253 \end{bmatrix}$

D $\begin{bmatrix} 14 & 54 \\ 1 & ^-3.50 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 68 \\ 253 \end{bmatrix}$

End of Goal 2 Sample Items

Algebra 2 Goal 2
Sample Items Key Report

1 **Objective:** **2.01**
Use the composition and inverse of functions to model and solve problems; justify results.
Thinking Skill: Analyzing **Correct Answer:** D

2 **Objective:** **2.01**
Use the composition and inverse of functions to model and solve problems; justify results.
Thinking Skill: Analyzing **Correct Answer:** D

3 **Objective:** **2.01**
Use the composition and inverse of functions to model and solve problems; justify results.
Thinking Skill: Applying **Correct Answer:** C

4 **Objective:** **2.01**
Use the composition and inverse of functions to model and solve problems; justify results.
Thinking Skill: Analyzing **Correct Answer:** A

5 **Objective:** **2.02**
Use quadratic functions and inequalities to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** D

6 **Objective:** **2.02**
Use quadratic functions and inequalities to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Integrating **Correct Answer:** C

7 **Objective:** **2.02**
Use quadratic functions and inequalities to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** C

8 **Objective:** **2.02**
Use quadratic functions and inequalities to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** B

9 **Objective:** **2.02**
Use quadratic functions and inequalities to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** D

10 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** C

11 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** A

12 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** A

13 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Applying **Correct Answer:** D

14 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** B

Sample Items Key Report

15 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Integrating **Correct Answer:** D

16 **Objective:** **2.03**
Use exponential functions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants, coefficients, and bases in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** D

17 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Analyzing **Correct Answer:** C

18 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Applying **Correct Answer:** B

19 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Applying **Correct Answer:** B

20 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Analyzing **Correct Answer:** B

21 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Analyzing **Correct Answer:** A

22 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Applying **Correct Answer:** C

23 **Objective:** **2.04**
Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a) Interpret the constants, coefficients, and bases in the context of the data. b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.
Thinking Skill: Analyzing **Correct Answer:** D

24 **Objective:** **2.05**
Use rational equations to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem. c) Identify the asymptotes and intercepts graphically and algebraically.
Thinking Skill: Analyzing **Correct Answer:** D

25 **Objective:** **2.05**
Use rational equations to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem. c) Identify the asymptotes and intercepts graphically and algebraically.
Thinking Skill: Applying **Correct Answer:** B

26 **Objective:** **2.05**
Use rational equations to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem. c) Identify the asymptotes and intercepts graphically and algebraically.
Thinking Skill: Applying **Correct Answer:** B

27 **Objective:** **2.05**
Use rational equations to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem. c) Identify the asymptotes and intercepts graphically and algebraically.
Thinking Skill: Analyzing **Correct Answer:** B

28 **Objective:** **2.05**
Use rational equations to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem. c) Identify the asymptotes and intercepts graphically and algebraically.
Thinking Skill: Analyzing **Correct Answer:** D

29 **Objective:** **2.06**
Use cubic equations to model and solve problems: a) Solve using tables and graphs. b) Interpret constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** C

30 **Objective:** **2.06**
Use cubic equations to model and solve problems: a) Solve using tables and graphs. b) Interpret constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** A

31 **Objective:** **2.06**
Use cubic equations to model and solve problems: a) Solve using tables and graphs. b) Interpret constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** B

32 **Objective:** **2.06**
Use cubic equations to model and solve problems: a) Solve using tables and graphs. b) Interpret constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** D

33 **Objective:** **2.06**
Use cubic equations to model and solve problems: a) Solve using tables and graphs. b) Interpret constants and coefficients in the context of the problem.
Thinking Skill: Integrating **Correct Answer:** C

34 **Objective:** **2.07**
Use equations with radical expressions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the degree, constants, and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** B

35 **Objective:** **2.07**
Use equations with radical expressions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the degree, constants, and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** C

36 **Objective:** **2.07**
Use equations with radical expressions to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the degree, constants, and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** A

37 **Objective:** **2.08**
Use equations and inequalities with absolute value to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** A

38 **Objective:** **2.08**
Use equations and inequalities with absolute value to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** C

39 **Objective:** **2.08**
Use equations and inequalities with absolute value to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** C

40 **Objective:** **2.08**
Use equations and inequalities with absolute value to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** A

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41 **Objective:** **2.08**
Use equations and inequalities with absolute value to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Analyzing **Correct Answer:** C

42 **Objective:** **2.08**
Use equations and inequalities with absolute value to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** B

43 **Objective:** **2.09**
Use the equations of parabolas and circles to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** A

44 **Objective:** **2.09**
Use the equations of parabolas and circles to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** D

45 **Objective:** **2.09**
Use the equations of parabolas and circles to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Integrating **Correct Answer:** B

46 **Objective:** **2.09**
Use the equations of parabolas and circles to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** D

47 **Objective:** **2.09**
Use the equations of parabolas and circles to model and solve problems; justify results. a) Solve using tables, graphs, and algebraic properties. b) Interpret the constants and coefficients in the context of the problem.
Thinking Skill: Applying **Correct Answer:** A

48 **Objective:** **2.10**
Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.
Thinking Skill: Applying **Correct Answer:** B

49 **Objective:** **2.10**
Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.
Thinking Skill: Applying **Correct Answer:** B

50 **Objective:** **2.10**
Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.
Thinking Skill: Analyzing **Correct Answer:** B

51 **Objective:** **2.10**
Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.
Thinking Skill: Applying **Correct Answer:** B

52 **Objective:** **2.10**
Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.
Thinking Skill: Organizing **Correct Answer:** A