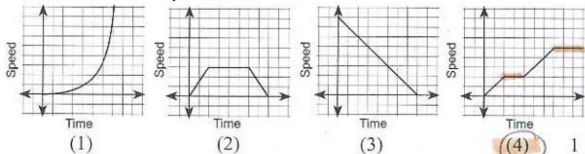


Answer all 24 questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. For each question, write on the space provided the numeral preceding the word or expression that best completes the statement or answers the question.

1. Which graph can represent a portion of a car race in which the driver makes two stops for fuel?



2. Which function has no x -intercept(s)? *use calc*

(1) $y = 4x$ *line* (2) $y = 4^x$ *exponential* (3) $y = 4x^2$ *quad.* (4) $y = 4 - x$ *line* 2 2

3. Which point is in the solution set to the quadratic linear system?

$$y = 2x^2 + x - 5 \text{ and } y + 3 = x$$

(1) $(1, -2)$ (2) $(1, 2)$ (3) $(-1, -2)$ (4) $(1, 2)$ 3 1

4. Which function is equivalent to $f(x) = \begin{cases} -3x + 6; & x < 2 \\ 3x - 6; & x \geq 2 \end{cases}$?

(1) $f(x) = |-3x - 6|$ (2) $f(x) = -|3x + 6|$ (3) $f(x) = |3x - 6|$ (4) $f(x) = -|-3x - 6|$ 4 3

5. The expression $9m^2 - 100$ is equivalent to

(1) $(3m - 10)(3m + 10)$ (2) $(3m - 10)(3m - 10)$ (3) $(3m - 50)(3m + 50)$ (4) $(3m - 50)(3m - 50)$ 5 1

6. Which correlation coefficient indicates the strongest linear relationship between the variables?

(1) 0.79 (2) 0.52 (3) -0.63 (4) -0.84 6 4

7. The tables below show the amount of money in different bank customer's accounts on the first day of each month for five months. Which customer's account increased at a constant rate per month?

Customer 1		Customer 2		Customer 3		Customer 4	
Months	Money	Months	Money	Months	Money	Months	Money
1	100	1	100	1	100	1	100
2	200	2	150	2	200	2	200
3	400	3	225	3	300	3	300
4	800	4	337.5	4	200	4	400
5	1600	5	506.25	5	100	5	500

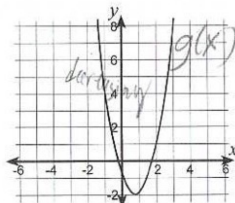
7 4

8. Jerome collects stamps. He saved up \$100 to buy stamps to add to his collection. The stamps cost \$1.50, \$2, or \$5. Which equation models the different ways that Jerome can spend his money where x represents the \$1.50 stamps, y represents the \$2 stamps, and z represents the \$5 stamps?

(1) $7.50x = 100$ (2) $15xz = 100$ (3) $1.5x + 2y + 5z = 100$ (4) $\frac{x}{1.5} + \frac{y}{2} + \frac{z}{5} = 100$ 8 3

9. Given $f(x)$ represented in the table and $g(x)$ represented in the graph, which is a true statement about the graphs in the interval $-5 < x < 0$?

x	y
-2	2
-1	3
0	4
1	5



- (1) one function is increasing while the other function is decreasing
(2) both functions are increasing
(3) both functions are decreasing
(4) neither function is increasing

10. In the equation $x^2 - 6x + 8 = 0$, what are the solutions for x ?

(1) $\{4, 2\}$ (2) $\{-4, 2\}$ (3) $\{4, -2\}$ (4) $\{-4, -2\}$ 10 1

11. Which is an example of bivariate data?

- (1) age of students in a club
(2) grade level and age of students in a school
(3) type of lunch each student orders at school
(4) attendance numbers for all students in one grade 11 2

12. The height of a rocket, at selected times, is shown in the table below.

Time (sec)	0	1	2	3	4	5	6	7
Height (ft)	180	260	308	324	308	260	180	68

Based on these data, which statement is not a valid conclusion?

- (1) The rocket was launched from a height of 180 feet. *y-intercept*
(2) The maximum height of the rocket occurred 3 seconds after launch.
(3) The rocket was in the air approximately 6 seconds before hitting the ground.
(4) The rocket was above 300 feet for approximately 2 seconds. 12 3

13. The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. Which is the correct equation that can be used for finding the height of the cone?

(1) $h = 3V(\pi r^2)$ (2) $h = \frac{3V}{\pi r^2}$ (3) $h = 3\pi r^2$ (4) $\frac{r^2}{3V}$ 13 2

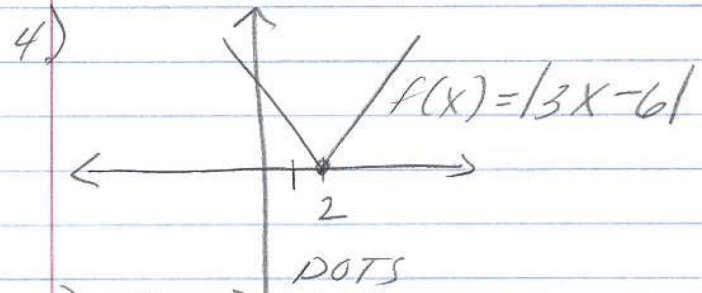
14. Which quadratic graph opens upward?

(1) $y = 3x^2 - 4x - 1$ (2) $y = -3x^2 - 1$ (3) $y = -x^2$ (4) $y = -x^2 + 3x + 2$ 14 1

3) $y = 2x^2 + x - 5$ 13.) $V = \frac{1}{3}\pi r^2 h$

$y + 3 = x$

$$\begin{array}{r} 2x^2 + x - 5 + 3 = x \\ \underline{-x \qquad -x} \\ 2x^2 - 2 = 0 \\ 2(x^2 - 1) = 0 \\ 2(x-1)(x+1) = 0 \\ 2 \neq 0 \quad x = 1 \quad | \quad x = -1 \\ \begin{array}{l} y + 3 = x \\ y + 3 = 1 \\ \underline{-3 \quad -3} \\ y = -2 \end{array} \quad \begin{array}{l} y + 3 = x \\ y + 3 = -1 \\ \underline{-3 \quad -3} \\ y = -4 \end{array} \\ (1, -2) \text{ \& } (-1, -4) \end{array}$$



5) $9m^2 - 100$
 $(3m - 10)(3m + 10)$

8) $1.5x + 2y + 5z = 100$

10) $x^2 - 6x + 8 = 0$
 $(x - 4)(x - 2) = 0$
 $x = 4 \quad | \quad x = 2$

~~$\frac{8}{-4} = -2$~~
 ~~$\frac{-4}{-6}$~~