

- 1) Consider the inequality below.

$$3x + 2 < 20$$

To solve the inequality for x in the fewest number of steps, what is the most logical first step?

- A. Subtract 2 from both sides of the inequality.
B. Multiply both sides of the inequality by 3.
C. Divide both sides of the inequality by 3.
D. Add 2 to both sides of the inequality.
E. Reverse the $>$ sign to a $<$ sign.
- 2) A movie theater sells child tickets for \$4 each and adult tickets for \$8 each. The theater has a total of 800 seats. The theater expects to sell three times as many child tickets as adult tickets. What expression represents the total ticket sales if the movie theater is sold out?
- A. $(4 * 200) + (8 * 600)$
B. $(4 * 400) + (8 * 400)$
C. $(4 * 600) + (8 * 200)$
D. $4 * 800$
E. $8 * 800$
- 3) Imagine two gardens, Garden C and Garden D. Garden C is perfectly square, while Garden D is rectangular. Garden D's length is 3 feet longer than one side of Garden C, and its width is 1 foot shorter than the same side of Garden C. If both gardens have the same area, which equation could be used to find the length in feet, y , of one side of Garden C?
- A. $(y + 3)(y - 1) = y * y$
B. $(y - 3)(y + 1) = y * y$
C. $(y + 3) + (y - 1) = y + y$
D. $2(y - 3) * 2(y + 1) = 2 * y * y$
E. $2(y + 3) + 2(y - 1) = 2 * y + 2 * y$
- 4) What is the 7th term in the pattern below?
- 1, 4, 9, 16, 25, ...
- A. 125
B. 49
C. 64
D. 36
E. 121

- 5) What is the slope of the line that passes through the points (10,-5) and (0, 15)?

A. -2
B. 2
C. $-1/2$
D. $1/2$
E. 0

- 6) What is the y-intercept of the graph of the equation $3x - 6y = 12$?

A) (0, -4)
B) (0, -2)
C) (0, 2)
D) (0, 4)
E) (0, -6)

- 7) A bike shop calculates the resale value of a used bicycle based on the information from the following table. What equation best describes the relationship between the resale value in dollars, v , of the bicycle and the number of years, x , since the bicycle was bought?

Bicycle Trade-in Value

Number of Years Since Purchased	1	2	3	4
Trade-In Value in Dollars	750	650	550	450

Which formula represents the relationship between the trade-in value in dollars, v , of the bike and the number of years, x , since the bike was purchased?

A) $v = 800 - 50x$
B) $v = 800 - 100x$
C) $v = 850 - 50x$
D) $v = 850 - 100x$
E) $t = 900 - 1,00x$

- 8) If a car travelled 330 miles in 3 hours, which expression represents the speed of the car in miles per hour?

A) $3(330)$
B) $\frac{330}{3}$
C) $330 + 3$
D) $\frac{3}{330}$
E) 330^3

- 9) Which number line represents the solution set for the inequality below when x is a real number?

$$3x + 4 \geq 2x - 5$$

- A. The number line with an open circle at -9 and an arrow to the right.
- B. The number line with an open circle at 2 and an arrow to the left.
- C. The number line with a closed circle at -9 and an arrow to the right.
- D. The number line with a closed circle at -3 and an arrow to the left.

- 10) Simplify the expression below.

$$(9 + 4y) - (3 - 2y)$$

- A) $6 + 6y$
- B) $9 + 4y - 3 + 2y$
- C) $12 + 6y$
- D) $6 + 2y$
- E) $6 - 6y$