



1. If $x + y = 500$ and $3x + 2y = 3000$, what is the value of $5x - y$?

A. 8000
B. 7000
C. 11500
D. -7000

$$\begin{aligned} 3x + 2y &= 3000 \rightarrow 3x + 2y = 3000 \\ 2x(x+y=500) &\rightarrow 2x + 2y = 1000 \quad (-) \\ \hline x &= 2000 \\ 2000 + y &= 500 \end{aligned}$$

$$\begin{aligned} y &= 500 - 2000 \\ y &= -1500 \\ 5x - y &= 5(2000) - (-1500) \\ &= 10000 + 1500 \\ &= 11500 \end{aligned}$$

2. Which of the following is equivalent to

$$(2x+3)^2 + (2x+3)(x-1) - 2(4x^2-9)$$

A. $(2x+3)(-x+4)$

B. $2(2x+3)(-3x+4)$

C. $(2x+3)(-x+8)$

D. $(-3x+5)(2x+3)$

$$\begin{aligned} &(2x+3)(2x+3+x-1-2(2x-3)) \\ &(2x+3)(2x+3+x-1-4x+6) \\ &(2x+3)(-x+8) \end{aligned}$$

3. Which of the following intervals could be part of the solution of the inequality $|3x - 3| < 3$?

A. $\left[\frac{1}{2}, \frac{5}{2}\right]$

B. $\left[\frac{1}{4}, \frac{3}{2}\right]$

C. $\left[-\frac{1}{2}, \frac{1}{2}\right]$

D. $\left[0, \frac{1}{2}\right]$

$$\begin{aligned} -3 < 3x-3 < 3+3 \\ 0 < 3x < 6 \\ 0 < x < 2 \end{aligned}$$



$$|x| = 5$$

$$x = 5 \quad x = -5$$

$$|x| < 5$$

$$-5 < x < 5$$

$$|x| > 5$$

$$x > 5, x < -5$$

$$\begin{aligned} (a+b)^2 &= a^2 + 2ab + b^2 \\ (a-b)^2 &= a^2 - 2ab + b^2 \\ a^2 - b^2 &= (a-b)(a+b) \end{aligned}$$

4. If $N = \frac{2h^2 + 40}{100}$, which of the following could be h in terms of N ?

A. $\sqrt{50N+20}$

B. $\sqrt{100N-20}$

C. $\sqrt{50N-20}$

D. $\sqrt{100N+20}$

$$100N = 2h^2 + 40$$

$$\frac{100N-40}{2} = h^2$$

$$\sqrt{50N-20} = h$$

5. If $\sqrt{x-2} = 10$, what is the value of $3x$?

A. 98

B. 102

C. 294

D. 306

$$x-2=100$$

$$x=102$$

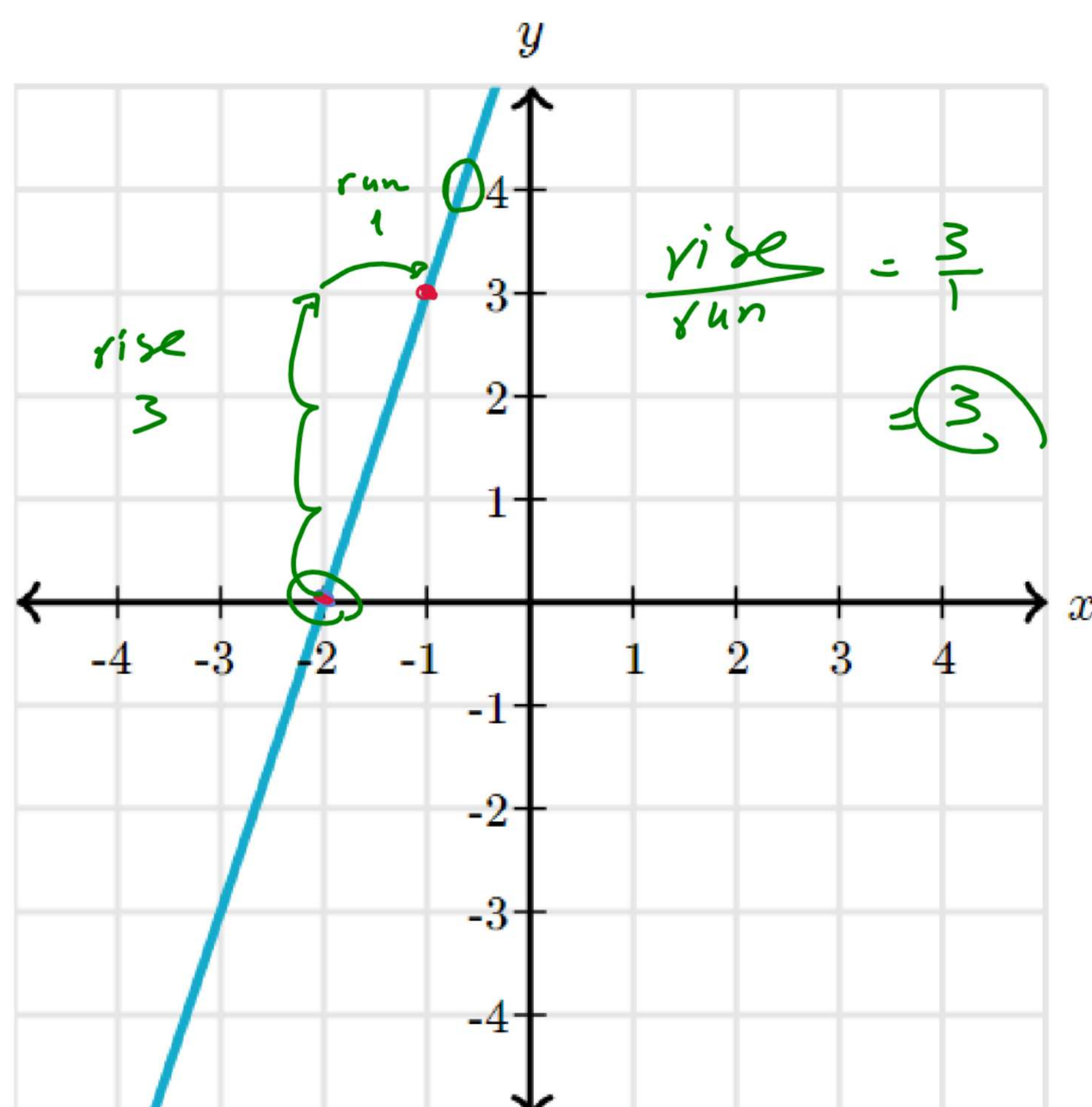
$$3(102) = 306$$

wed Solving Mr. Kably
Fri Mr. Kably solving.

Assistant Session

$y = mx + b$
 $m = \frac{y_2 - y_1}{x_2 - x_1}$
 Graph: $\frac{\text{rise}}{\text{run}}$
 Equ: no. beside x
 y -int
 $\begin{cases} +ve \\ -ve \\ zero \\ undefined \end{cases}$

6. What is the slope of the line shown in the graph below?



- A. -3
 B. -1
 C. 3
 D. 1/3

7. What is the equation of the line (d_1) passing through A (3,4) and parallel to the line (d) of equation $y = -2x + 5$?

- A. $y = -2x + 3$
 $-2(3) + 3 = -6 + 3 = -3$
 B. $y = \frac{1}{2}x + 10$
 C. $y = -2x + 10$
 D. $y = 2x$
 $m = \frac{2}{5}$
 $m_{\perp} = -\frac{5}{2}$

8. A circle has a circumference of 400 units.

What is the approximate diameter of the circle?

- A. 127 units
 B. 215 units
 C. 312 units
 D. 200 units

$2\pi r = 400$
 $2r = \frac{400}{\pi}$
 $d = \frac{400}{3.14}$

9. If $3^{2x-1} = 27$, what is the value of $\frac{1}{2}x + 3$?

- A. 3
 B. 0
 C. 5
 D. 4

$3^{2x-1} = 27$
 $2x-1 = 3$
 $2x = 4$
 $x = 2$
 $\frac{1}{2}(2) + 3 = 1 + 3 = 4$
 $3 \cdot 3 \cdot 3 = 27 = 3^3$



Domain
All real nos.
 $\frac{1}{x-5}$
 $\sqrt{x-5}$
 $\frac{1}{\sqrt{x-5}}$

$x-5 \neq 0$
 $x-5 \geq 0$
 $x-5 > 0$

10. If $3 - 8x + 5x^2 = 0$, which of the following is a solution for x ?

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~~A.~~ 0 $3 - 0 + 0 = 3$

B. 2

C. -1

D. 1 $3 - 8 + 5 = 0$

13. What is the domain of the function

$f(x) = \sqrt{3-x}$?

A. $]-\infty; +\infty[$

B. $]-\infty; +3]$

C. $[+3; +\infty[$

D. $]-3; 3[$

$3 - x \geq 0$

$3 \geq x$

11. If k is an integer, and $\frac{k+5+6}{3}$ is greater than 15, what is the lowest possible value of k ?

~~A.~~ 34

B. 35

C. 33

D. 36

$\frac{k+11}{3} > 15 \times 3$

$k+11 > 45 - 11$

$k > 34$

35, 36, 37, ...

14. The lengths of two sides of a triangle are 4 and 7. Which of the following represents a , the possible length of the remaining side?

A. $a > 11$

B. $3 < a < 11$

C. $-3 < a < 11$

D. impossible

Diff $<$ Any side $<$ Sum
 $7 - 4$
 3
 $7 + 4$
 11

12. Amanda paid $\$a$ for a makeup bag set that was only \$15 less than half the original price. What was the original price, in dollars, of this set?

3 **A.** $2a + 30$

B. $a - 15$

20 ~~C.~~ $\frac{1}{2}a - 15$

Paula D. $2a + 15$

$a = \frac{1}{2}x - 15$

$2(a + 15) = \frac{1}{2}x$

$2a + 30 = x$

m, 15. Starting at sunrise, the temperature rose 1.5 degrees Celsius every hour.

After 10 hours, the temperature was 40 degrees Celsius. Which of the following models the temperature y , in Celsius, after x hours from sunrise?

A. $y - 40 = 1.5(x - 10)$

~~B.~~ $y - 10 = 10(x + 1.5)$

C. $y - 10 = 1.5(x - 40)$

~~D.~~ $y - 1.5 = 10(x + 40)$

$y - 40 = 0$
 $y = 40$

$y = mx + b$
slope
Average rate of change
y-int
initial starting at $x=0$