

Section 9-5: The Slope of Parallel and Perpendicular Lines

Parallel Lines

1. 080009a, P.I. A.A.38

Which equation represents a line parallel to the line $y = 2x - 5$?

- [A] $y = -2x - 5$ [B] $y = -\frac{1}{2}x - 5$
[C] $y = 5x - 2$ [D] $y = 2x + 5$

2. 010522a, P.I. A.A.38

Which equation represents a line that is parallel to the line whose equation is $2x + 3y = 12$?

- [A] $6y + 4x = 2$ [B] $6y - 4x = 2$
[C] $4x - 6y = 2$ [D] $6x + 4y = -2$

3. 060105a

Which properties best describe the coordinate graph of two distinct parallel lines?

- [A] different slopes and same intercepts
[B] same slopes and different intercepts
[C] same slopes and same intercepts
[D] different slopes and different intercepts

4. 060210a

If two lines are parallel and the slope of one of the lines is m , what is the product of their slopes?

- [A] 0 [B] $2m$ [C] m^2 [D] 1

5. 010309a

Line P and line C lie on a coordinate plane and have equal slopes. Neither line crosses the second or third quadrant. Lines P and C must

- [A] form an angle of 45° [B] be vertical
[C] be perpendicular [D] be horizontal

Perpendicular Lines

6. 060528a, P.I. G.G.63

Which equation represents a line that is perpendicular to the line whose equation is $-2y = 3x + 7$?

[A] $y = \frac{3}{2}x - 3$ [B] $2y = 3x - 3$

[C] $y = \frac{2}{3}x - 3$ [D] $y = x + 7$

7. 080630a, P.I. G.G.63

Which line is perpendicular to the line whose equation is $5y + 6 = -3x$?

[A] $y = -\frac{5}{3}x + 7$ [B] $y = -\frac{3}{5}x + 7$

[C] $y = \frac{3}{5}x + 7$ [D] $y = \frac{5}{3}x + 7$

8. 060729a

If the product of x and $\frac{1}{m}$ is -1 , $m \neq 0$, then x is equivalent to

[A] m [B] $-m$ [C] $-\frac{1}{m}$ [D] $1 - m$

9. 010834a, P.I. G.G.64

Write an equation of a line that is perpendicular to the line $y = \frac{2}{3}x + 5$ and that passes through the point $(0,4)$.

10. 080130a, P.I. G.G.63

Shanaya graphed the line represented by the equation $y = x - 6$. Write an equation for a line that is parallel to the given line. Write an equation for a line that is perpendicular to the given line. Write an equation for a line that is identical to the given line but has different coefficients.

11. 060722a, P.I. G.G.63

Which statement describes the lines whose equations are $y = \frac{1}{3}x + 12$ and $6y = 2x + 6$?

[A] They are perpendicular to each other.

[B] They intersect each other.

[C] They are parallel to each other.

[D] They are segments.

[1] D

[2] A

[3] B

[4] C

[5] B

[6] C

[7] D

[8] B

[2] A correct equation is written, such as

$$y = -\frac{3}{2}x + 4 \text{ or } (y - 4) = -\frac{3}{2}(x - 0).$$

[1] An appropriate equation is written, but one computational error is made or one incorrect substitution is made.

[1] An appropriate equation is written, but one conceptual error is made, such as writing an equation for a parallel line going through (0,4) or for a perpendicular line that does not go through (0,4).

or [1] The slope is identified correctly as $-\frac{3}{2}$

or the y-intercept as 4, but no equation or an incorrect equation is written.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[9] incorrect procedure.

[3] Three correct equations are shown, such as $y = x + 7$, $y = -x - 6$, and $2y = 2x - 12$.

[2] Only two correct equations are shown.

[1] Only one correct equation is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[10] incorrect procedure.

[11] C