

NAME: \_\_\_\_\_

*G.G.63: Determine whether two lines are parallel, perpendicular, or neither, given their equations*

1. fall0822ge, P.I. G.G.63

The lines  $3y + 1 = 6x + 4$  and  $2y + 1 = x - 9$  are

- [A] neither parallel nor perpendicular  
[B] perpendicular  
[C] the same line [D] parallel

2. 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 segments.  
[B] They are perpendicular to each other.  
[C] They intersect each other.  
[D] They are parallel to each other.

3. 080909ge, P.I. G.G.63

What is the equation of a line that is parallel to the line whose equation is  $y = x + 2$ ?

- [A]  $x + y = 5$  [B]  $2x + y = -2$   
[C]  $y - x = -1$  [D]  $y - 2x = 3$

4. 060926ge, P.I. G.G.63

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

- [A]  $2y = 3x + 6$  [B]  $2y = -3x + 6$   
[C]  $6y = -4x + 12$  [D]  $3y = -2x + 12$

5. 060528a, P.I. G.G.63

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

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

6. 080630a, P.I. G.G.63

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

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

7. 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.

8. fall9925b, P.I. G.G.63

Given two lines whose equations are  $3x + y - 8 = 0$  and  $-2x + by + 9 = 0$ , determine the value of  $b$  such that the two lines will be perpendicular.

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[1] A \_\_\_\_\_

[2] D \_\_\_\_\_

[3] C \_\_\_\_\_

[4] A \_\_\_\_\_

[5] B \_\_\_\_\_

[6] B \_\_\_\_\_

[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

[7] incorrect procedure.

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[2]  $b = 6$  by determining the slopes of both lines, sets  $\frac{2}{b} =$  negative reciprocal slope of  $-3$  (i.e.  $\frac{1}{3}$ ).

or [2]  $b = 6$  by determining the product of the slopes  $= -1$ .

[1] Sets  $\frac{2}{b} = -3$  and solves for  $b = \frac{-2}{3}$ .

or [1] Finds slope of perpendicular as  $\frac{1}{3}$ , but does not solve  $b$ .

or [1]  $b = 6$  and no work shown.

[0] Does not identify slopes.

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

[8] obviously incorrect procedure.

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