

**8.6 Classwork: Parallel & perpendicular slopes, applications**      **HSG.GPE.B.5**

1. What is the slope of a line parallel to the line with the equation  $y = 2x + 5$ ?
  
  
  
  
  
2. What is an equation of the line that passes through the point  $(6, 8)$  and is perpendicular to a line with equation  $y = \frac{3}{2}x + 5$ ?
  - (a)  $y - 8 = \frac{3}{2}(x - 6)$
  - (b)  $y - 8 = -\frac{3}{2}(x - 6)$
  - (c)  $y + 8 = \frac{3}{2}(x + 6)$
  - (d)  $y + 8 = -\frac{3}{2}(x + 6)$
  
  
  
  
  
3. What is an equation of the image of the line  $y = \frac{3}{2}x - 4$  after a translation up 3?
  
  
  
  
  
4. What equation represents a line with a  $y$ -intercept of  $b = 3$  that is perpendicular to the line represented by  $y = \frac{2}{3}x + 1$ ?
  
  
  
  
  
5. Determine and state an equation of the line perpendicular to the line  $5x - 4y = 10$  and passing through the point  $(5, 12)$ .
  
  
  
  
  
6. Write an equation of the line that is parallel to the line whose equation is  $3y + 7 = 2x$  and passes through the point  $(2, 6)$ .

7. A translation maps  $\overline{MN} \rightarrow \overline{M'N'}$ . If  $\overline{MN}$  is represented by  $y = -3x + 6$ , which equation can represent  $\overline{M'N'}$ , the image of  $\overline{MN}$ ?

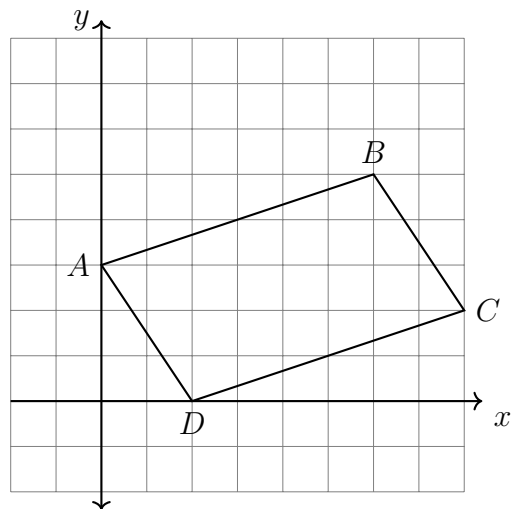
(a)  $y = -3x + 12$

(c)  $y = 3x + 12$

(b)  $y = \frac{1}{3}x + 6$

(d)  $y = -\frac{1}{3}x + 6$

8. Show that quadrilateral  $ABCD$  is a parallelogram.  $A(0, 3)$ ,  $B(6, 5)$ ,  $C(8, 2)$ ,  $D(2, 0)$



9. Show that triangle  $ABC$  is a right triangle.  $A(0, 3)$ ,  $B(10, 8)$ ,  $C(4, 0)$

