Transversals – Slopes of Parallel and Perpendicular Lines

Hw Section 3.6 Name_____

Directions: Write the equation of the line described.

1)through (-2,2), parallel to
y = -x - 2

Point (-2,2) Slope $m=-1$, $\parallel m=-1$

Point-Slope form
$y-y_1=m(x-x_1)$
$y-2=-1(x+2)$

2) through (-2, -3), parallel to
y = x -3

Point (-2,-3) Slope $m=1$, $\parallel m=1$

Point-Slope form
$y-y_1=m(x-x_1)$
$y+3=1(x+2)$

3) through (-4, -5), parallel to $y=\frac{5}{2}x$

Point (-4,-5) Slope $m=\frac{5}{2}$

Point-Slope Form
$y-y_1=m(x-x_1)$
$y+5=\frac{5}{2}(x+4)$

4) through (-3, 1), perpendicular to
$y=\frac{3}{4}x-2$

Point (-3,1) Slope $m=\frac{3}{4}$, $\perp m=-\frac{4}{3}$ Point-Slope Form $y-y_1=m(x-x_1)$ $y-1=-\frac{4}{3}(x+3)$

5) through (-3, -2), perpendicular to
Y = -x -4

Point (-3,-2) Slope $m=-1$, $\perp m=1$ Point-Slope Form $y-y_1=m(x-x_1)$ $y+2=1(x+3)$

6) through (-3, -5), perpendicular to
y = -3x - 5

Point (-3,-5) Slope $m=-3$, $\perp m=\frac{1}{3}$ Point-Slope form $y-y_1=m(x-x_1)$ $y+5=\frac{1}{3}(x+3)$

Transversals – Slopes of Parallel and Perpendicular Lines

Hw Section 3.6 Name_____

Directions: Determine whether the lines are parallel, perpendicular or neither.

7) $2x - 7y = -42$
$4y = -7x - 2$

$-7y = -2x - 42$
$y = \frac{2}{7}x + 6$
$m = 2/7$

$y = -\frac{7}{4}x - \frac{1}{2}$
$m = -7/4$

Neither

8) $y = 3$
$x = -2$

horizontal
vertical

⊥ Lines

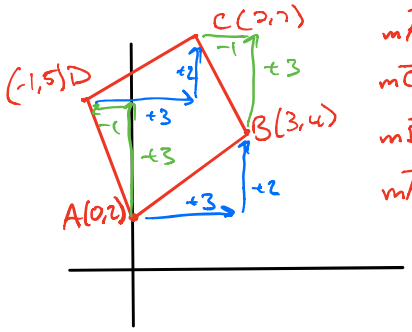
9) $2x + 5y = -1$
$10y = -4x - 20$

$5y = -2x - 1$
$y = -\frac{2}{5}x - \frac{1}{5}$
$m = -\frac{2}{5}$

$y = -\frac{2}{5}x - 2$
$m = -\frac{2}{5}$

Parallel Lines

10) A parallelogram is a quadrilateral that has opposite sides that are parallel. Is quadrilateral ABCD a parallelogram? .Why or why not?
A(0,2), B(3,4), C(2,7) and D(-1,5)



$m\overline{AB} = \frac{\Delta y}{\Delta x} = \frac{2}{3}$
$m\overline{CD} = \frac{\Delta y}{\Delta x} = \frac{2}{3}$ $\Big\} \parallel$
$m\overline{BC} = \frac{\Delta y}{\Delta x} = \frac{3}{-1}$
$m\overline{AD} = \frac{\Delta y}{\Delta x} = \frac{3}{-1}$ $\Big\} \parallel$

ABCD is a parallelogram because opposite sides are parallel.

Algebra Review

Solve: $73 = 40 - 3k$

$33 = -3k$
$-11 = k$

Solve: $7h + 15 = 3h - 27$

$4h + 15 = -27$
$4h = -42$
$h = \frac{-42}{4}$
$h = \frac{-21}{2}$

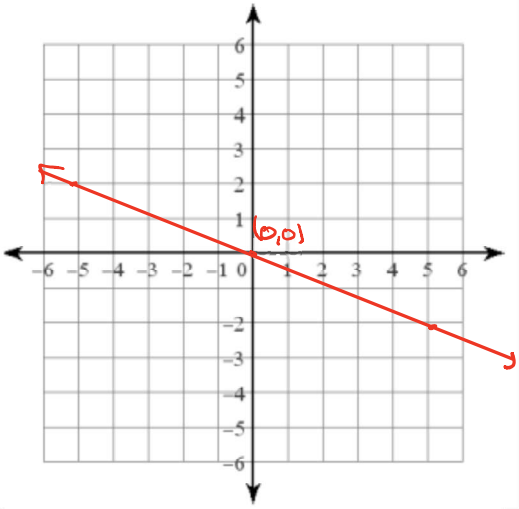
Multiply: $8n(7 - 5n)$

$= 56n - 40n^2$

Factor: $42p^3 + 28p$

$= 7p(6p^2 + 4)$
$= 14p(3p^2 + 2)$

Graph: $y = -\frac{2}{5}x$



Graph: $x = 4$