

Algebra: Point-Slope Form of a Line

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Name: _____ Date: _____ Score: _____

DIRECTIONS

Write the equation of the line in point-slope form, then convert to slope-intercept form $y = mx + b$.

1 Write equation:
 $m=2$, point $(1, 3)$

Answer: _____

2 Write equation:
 $m=3$, point $(0, -2)$

Answer: _____

3 Write equation:
 $m=-1$, point $(2, 5)$

Answer: _____

4 Write equation:
 $m=1/2$, point $(4, 1)$

Answer: _____

5 Write equation:
 $m=-2$, point $(-1, 3)$

Answer: _____

6 Write equation:
 $m=4$, point $(2, -3)$

Answer: _____

7 Write equation:
pts: $(1,2)$ and $(3,8)$

Answer: _____

8 Write equation:
pts: $(0,5)$ and $(2,1)$

Answer: _____

9 Write equation:
 $m=-3$, point $(1, -1)$

Answer: _____

10 Write equation:
pts: $(-2,4)$ and $(4,1)$

Answer: _____

Answer Key & Solutions

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TEACHER NOTES

Point-slope: $y - y_1 = m(x - x_1)$. Distribute and solve for y to get slope-intercept. Watch negative signs when substituti

ng.

1 $m=2$, point (1,3)

$$= y = 2x + 1$$

$$y-3=2(x-1) \rightarrow y=2x-2+3=2x+1$$

2 $m=3$, point (0,-2)

$$= y = 3x - 2$$

$$y+2=3(x-0) \rightarrow y=3x-2$$

3 $m=-1$, point (2,5)

$$= y = -x + 7$$

$$y-5=-1(x-2) \rightarrow y=-x+2+5=-x+7$$

4 $m=1/2$, point (4,1)

$$= y = (1/2)x - 1$$

$$y-1=1/2(x-4) \rightarrow y=1/2x-2+1=1/2x-1$$

5 $m=-2$, point (-1,3)

$$= y = -2x + 1$$

$$y-3=-2(x+1) \rightarrow y=-2x-2+3=-2x+1$$

6 $m=4$, point (2,-3)

$$= y = 4x - 11$$

$$y+3=4(x-2) \rightarrow y=4x-8-3=4x-11$$

7 points (1,2) and (3,8)

$$= y = 3x - 1$$

$$m=(8-2)/(3-1)=3; y-2=3(x-1) \rightarrow y=3x-1$$

8 points (0,5) and (2,1)

$$= y = -2x + 5$$

$$m=(1-5)/(2-0)=-2; y-5=-2x \rightarrow y=-2x+5$$

9 $m=-3$, point (1,-1)

$$= y = -3x + 2$$

$$y+1=-3(x-1) \rightarrow y=-3x+3-1=-3x+2$$

10 points (-2,4) and (4,1)

$$= y = -1/2x + 3$$

$$m=(1-4)/(4+2)=-1/2; y-1=-1/2(x-4) \rightarrow y=-1/2x+3$$