

OCC College Credit:
 Pre-Req: Passed Alg2CC & Regents
 Must register before Friday Sept. 13th
 Link to instructions on my website
 Why you should register... or not

Why you should consider

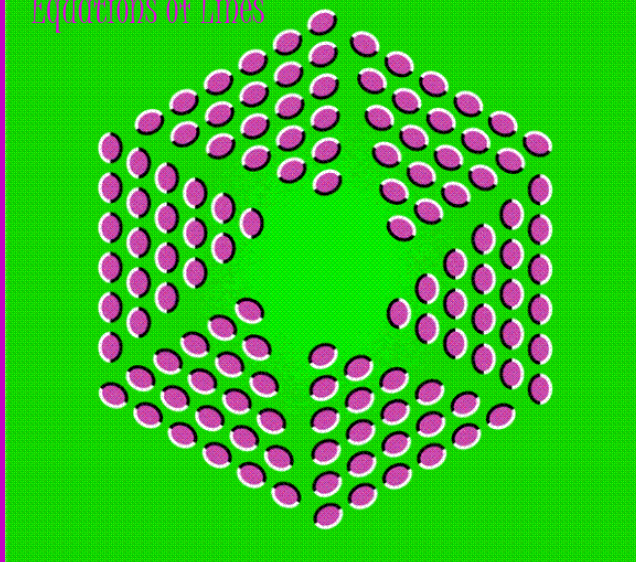
- o No cost
- o 4 credits at OCC
- o May transfer to your non-OCC college

Why you might not (you have this choice)

- o Struggling student won't want a poor grade to average into OCC average if attending there.
- o Cannot drop out of OCC course after the Sept 15th without showing a failure on OCC transcript. This affects FASFA financial aid application in a bad way whether you go to OCC or any college.

Sep 7-5:01 PM

Equations of Lines



Sep 8-4:41 PM

Homework 1 - 4 and pg 88 - 89

1. D: $\{x|x \neq 2\}$
 $(-\infty, 2) \cup (2, \infty)$

2. D: $\{x|x \neq 5, -1\}$
 $(-\infty, -1) \cup (-1, 5) \cup (5, \infty)$

3. D: $\{x|x \leq 8\}$
 $(-\infty, 8]$

4. D: $\{x|x \geq -1, x \neq 0\}$
 $[-1, 0) \cup (0, \infty)$

5. D: $\{x|x \in \mathbb{R}\}$
 $R: \{y|y \geq -2\}$
 $[-2, \infty)$

6. D: $\{x|x \neq 4, -4\}$
 $(-\infty, -4) \cup (-4, 4) \cup (4, \infty)$
 $R: \{y|y \neq 0\}$

7. D: $\{x|x \leq 7\}$
 $R: \{y|y \geq 0\}$
 $(-\infty, 7]$
 $[0, \infty)$

9. D: $\{x|x \in \mathbb{R}\}$
 $R: \{y|y \leq 3\}$
 $(-\infty, \infty)$
 $(-\infty, 3]$

60. no

62. yes

64. yes

66. no

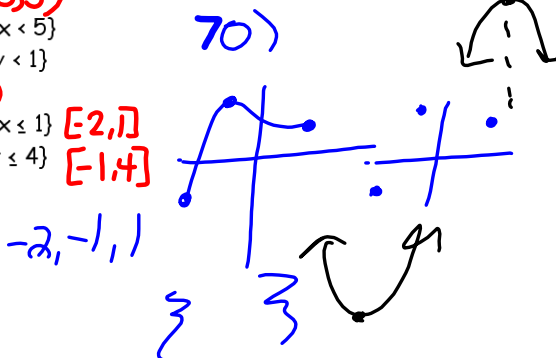
68. D: $\{x|-3 \leq x < 5\}$
 $R: \{y|-4 \leq y < 1\}$
 $[-3, 5)$
 $[-4, 1)$

70. D: $\{x|-2 \leq x \leq 1\}$
 $R: \{y|-1 \leq y \leq 4\}$
 $[-2, 1]$
 $[-1, 4]$

7. D: $\{x|x \leq 7\}$
 $R: \{y|y \geq 0\}$
 $(-\infty, 7]$
 $[0, \infty)$

9. D: $\{x|x \in \mathbb{R}\}$
 $R: \{y|y \leq 3\}$
 $(-\infty, \infty)$
 $(-\infty, 3]$

$f(x) = -x^2 + 4x - 1$



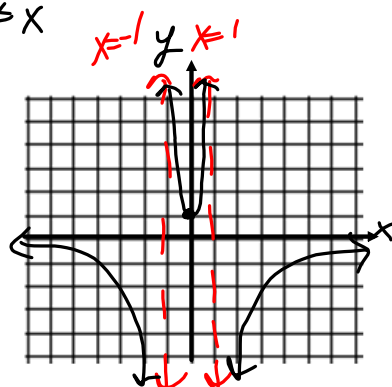
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Per 1 & 6/7

6. $g(x) = \frac{1}{(1-x^2)} \pm \sqrt{\frac{1-x^2}{1+x^2}}$
 $\pm \neq x$

D: $\{x|x \neq \pm 1\}$

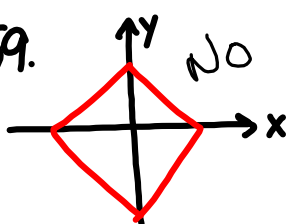
R: $\{y|y < 0 \text{ or } y \geq 1\}$



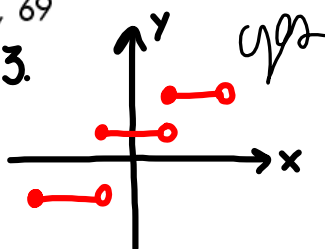
Sep 9-7:04 AM

In text, pg 89: 59, 63, 67, 69

59.

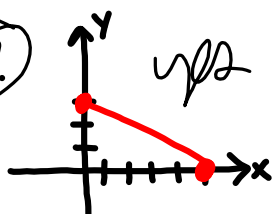


63.

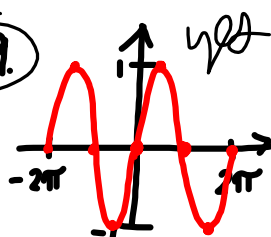


} function?

67.



69.



} $D \in \mathbb{R}$

$$D: \{x | 0 \leq x \leq 5\}$$

$$D: \{x | -2\pi \leq x \leq 2\pi\}$$

$$R: \{y | 0 \leq y \leq 3\}$$

$$R: \{y | -1 \leq y \leq 1\}$$

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Writing Equations of Lines

Midpoint Formula:

$$(x_m, y_m) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Slope Formula:

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

Slope-Intercept Form of a Line:

$$m, b$$

$$y = mx + b$$

Point-Slope Form of a Line:

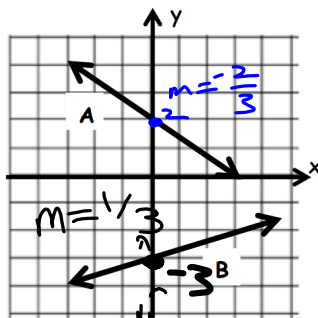
$$(x_1, y_1), m$$

$$y - y_1 = m(x - x_1)$$

Aug 21-9:06 PM

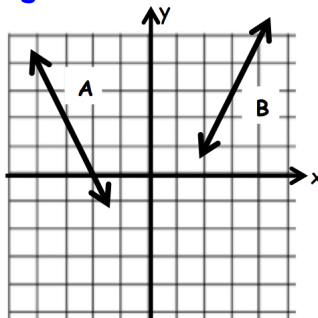
Write the equation of each graph in slope-intercept form (where applicable).

$$y = mx + b$$



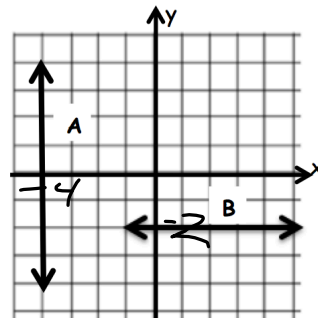
A: $y = -\frac{2}{3}x + 2$

B: $y = \frac{1}{3}x - 3$



A: _____

B: _____



A: $x = -4$

B: $y = -2$

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Perpendicular Lines have opposite reciprocal Slopes

⊥

Parallel Lines have same Slopes

//

Write the equation of the line with the given information in point-slope and slope-intercept form.

1. $m = 3$, through $(2, -5)$

point-slope $\rightarrow y + 5 = 3(x - 2)$

slope-intercept $\rightarrow y + 5 = 3x - 6$

$$y = 3x - 6 - 5$$

$$y = 3x - 11$$

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Slope-int: $y = mx + b$ P+1 Slope $y - y_1 = m(x - x_1)$

2. slope = $\frac{1}{2}$, through $(-1, 3)$

point-slope $\rightarrow y - 3 = \frac{1}{2}(x + 1)$

slope-intercept $\rightarrow [y - 3 = \frac{1}{2}(x + 1)] \cdot 2$
 $2y - 6 = x + 1$
 $2y = x + 7$
 $y = \frac{1}{2}x + \frac{7}{2}$

3. through $(-3, 5)$ and $(1, -3)$ $m = \frac{-3 - 5}{1 - (-3)} = \frac{-8}{4} = -2$

point-slope $\rightarrow y - 5 = -2(x + 3)$ $y - 1 = -2(x + 1)$
 $y + 3 = -2(x - 1)$

slope-intercept $\rightarrow$
 $y = -2x - 1$

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4. parallel to $6x - 2y - 14 = 0$ and through $(-2, 2)$

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

slope-intercept $\rightarrow y = 3x + 6 + 2$
 $y = 3x + 8$

$-2y = -6x + 14$
 $-2y = -6x + 14$
 $y = 3x - 7$
 $m = 3$

5. perpendicular to $y = 4x + 19$ and through $(4, 2)$

$m = 4$ $\perp m = -\frac{1}{4}$
point-slope $\rightarrow y - 2 = -\frac{1}{4}(x - 4)$

slope-intercept $\rightarrow y(y - 2) = [-\frac{1}{4}(x - 4)] \cdot 4$
 $y - 2 = -x + 4$
 $y = -x + 6$
 $4y = -x + 24$
 $y = -\frac{1}{4}x + 6$

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6. perpendicular bisector of line segment that connects $(-10, 2)$ and $(-4, 4)$

point-slope $\rightarrow y - 3 = -3(x + 7)$
 $(x_1, y_1), m$

slope-intercept $\rightarrow$
 b, m $y = -3x - 21 + 3$
 $y = -3x - 18$

① $m = \frac{4 - 2}{-4 - (-10)} = \frac{2}{6} = \frac{1}{3}$ m dpt
 $\perp m = -3$

(2) m dpt = $(\frac{-4 + (-10)}{2}, \frac{2 + 4}{2})$
 $= (\frac{-14}{2}, \frac{6}{2})$
 $= (-7, 3)$

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