

CP Algebra 2
Unit 2 Review

Name: _____

Linear Patterns - Equations
Is it Linear?

- 1.) $y^3 = 2x - 5$
- 2.) $y + 3 = \sqrt{x - 2}$
- 3.) $5x + 7y = 5 - 3y$
- 4.) $y = \left| \frac{2}{5}x - 3 \right|$
- 5.) $y = \frac{3}{x} - 8$
- 6.) $y = -8x + \sqrt{3}$

Linear Patterns – Tables
Is it Linear?

- 4.)

x	2	3	4	5	8
y	7	11	15	19	31
- 5.)

x	1	3	6	8	9
y	25	21	17	13	9
- 6.)

x	-1	8	5	12	0
y	10	-17	-8	-29	7

Graphing Lines

- 1.) Table of Values
 $y = \frac{1}{4}x - 2$
- 2.) Intercepts
 $6x - 8y = 24$
- 3.) Slope-Intercept form
 $3y = x - 9$
- 4.) Table of Values
 $2x - 3y = 12$
- 5.) Intercepts
 $y = \frac{5}{2}x - 4$
- 6.) Slope-Intercept Form
 $5x - 7y = 14$

Writing Equations of Lines

- 1.) Through $\left(\frac{2}{5}, -\frac{1}{2}\right)$ and $\left(\frac{7}{3}, -5\right)$
- 2.) Through $\left(\frac{1}{5}, -3\right)$ parallel to $3x - 5y = 1$
- 3.) Through $\left(\frac{9}{2}, \frac{14}{9}\right)$
perpendicular to $8x - y = 12$
- 4.) Through $\left(\frac{3}{7}, \frac{11}{5}\right)$
perpendicular to $6x - 5y = 18$.
- 5.) Parallel to $5y - 8x = 12$ at its y-intercept.
- 6.) Perpendicular to $4x - 7y = 12$ at its x-intercept

Lines Involving Triangles

A(1, 2), B(5, 7), C(8, -3)

- 1.) Perpendicular Bisectors & Intersection Pt
- 2.) Altitudes & Intersection Pt
- 3.) Medians & Intersection Pt

A(-5, -4), B(1, 3), C(7, 0)

- 4.) Altitudes & Intersection Pt
- 5.) Perpendicular Bisectors & Intersection Pt
- 6.) Medians & Intersection Pt

Systems of Equations

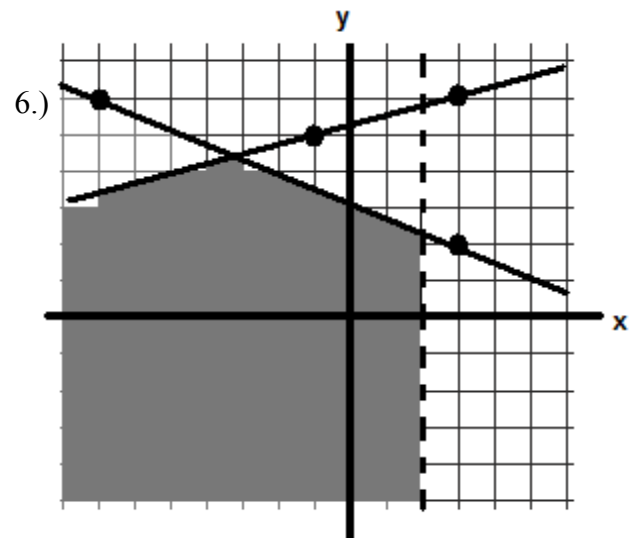
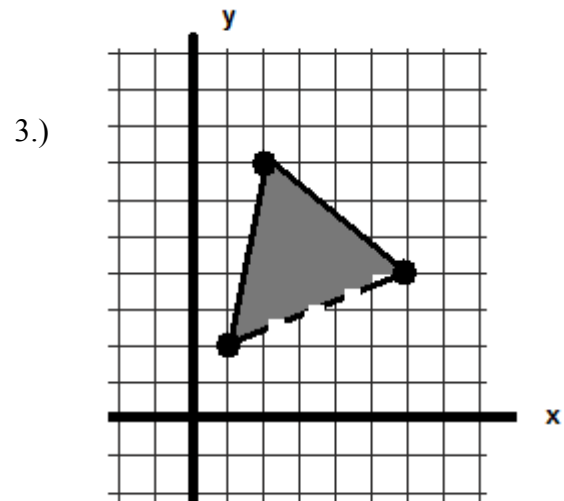
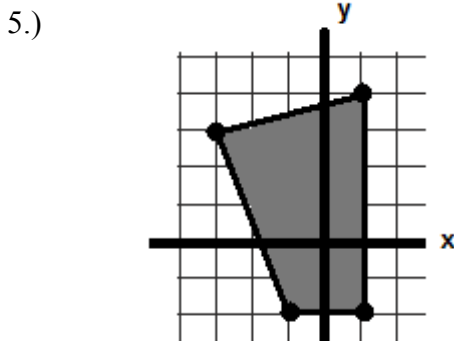
- 1.) Graphing
$$\begin{cases} y = x - 4 \\ y = \frac{1}{5}x + 4 \end{cases}$$
- 2.) Elimination
$$\begin{cases} 5y = 3x - 10 \\ 4x - 6y = 24 \end{cases}$$
- 3.) Substitution
$$\begin{cases} 2x - 3y = 12 \\ 6x - 8y = 17 \end{cases}$$
- 4.) Elimination
$$\begin{cases} 7x = 5y \\ 10x - 6y = 40 \end{cases}$$
- 5.) Substitution
$$\begin{cases} 3x - 7y = 10 \\ 5x - 2y = 11 \end{cases}$$
- 6.) Graphing
$$\begin{cases} 2x + 5y = 20 \\ 4x - 6y = 72 \end{cases}$$

Systems of Inequalities

1.)
$$\begin{cases} 2x - 3y > 6 \\ x + 5y \geq 10 \\ x < 8 \end{cases}$$

2.)
$$\begin{cases} 5x - 3y \geq 12 \\ 2x + y > 4 \\ 5 \geq y \end{cases}$$

4.)
$$\begin{cases} 7x - 4y \leq 16 \\ x + y < 8 \\ x > -3 \end{cases}$$



Linear Regression

5.)

x	y
2	8
5	9
6	10
7	9
9	12
10	15
11	18
12	20

Find the equation of the line.

Is this line a good model? Explain!

Predict “y” if $x = 20$.

Predict “x” if $y = 100$.

6.)

x	y
2001	150
2002	167
2003	172
2004	175
2005	188
2006	185
2007	190
2008	195
2009	199
2010	200

Find the equation of the line.

Predict “y” if $x = 2020$.

Predict “x” if $y = 250$.