



Math Summer Assignment for
Geometry Honors
Wall Township Math Department
Optional Summer Assignment



- ★ This summer assignment is intended to prepare you for the math course above.
- ★ You will find examples and video links to help you complete the practice.

Skill 1: Equations of Lines



Helpful Video Link:

- [Determine the slope and y intercept from an equation in standard form](#)
- [Graphing a linear equation by rewriting from standard form to slope intercept form](#)

Practice:

Identify the slope and y-intercept of each linear equation below.

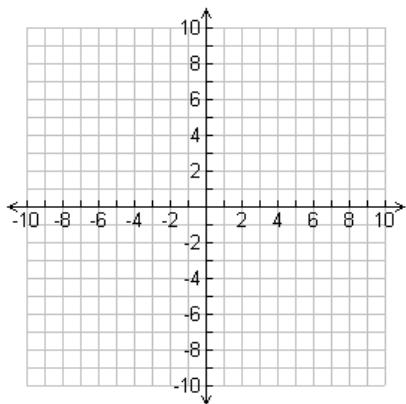
1) $y = \frac{1}{2}x - 5$

2) $3x + 4y = 12$

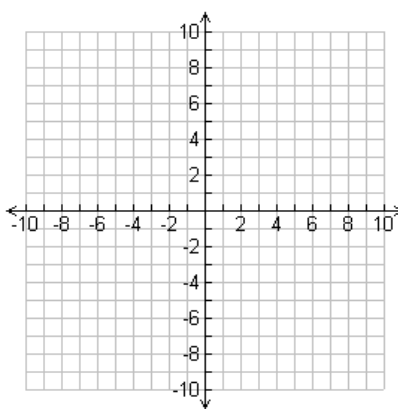
3) $y - 4 = 2(x - 5)$

Graph each of the following on the graph provided.

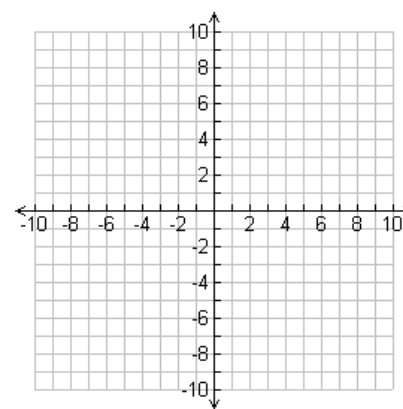
4) $y = 3x - 2$



5) $5x - 2y = 10$



6) $x = -2$



Skill 2: Solving Equations



Helpful Video Link:

→ [Multi-Step Equations: Solving Proportions](#)

Practice: Solve the following equations for x.

1)	$4x + 5 = 2x - 3$	2)	$3(2x - 4) = 4(x - 2)$	3)	$5x - 2 + 3x = 6 + 4x - 1$
4)	$\frac{4}{x} = \frac{2}{7}$	5)	$\frac{20}{x-10} = \frac{4}{5}$	6)	$\frac{2x}{3} = \frac{16}{x}$

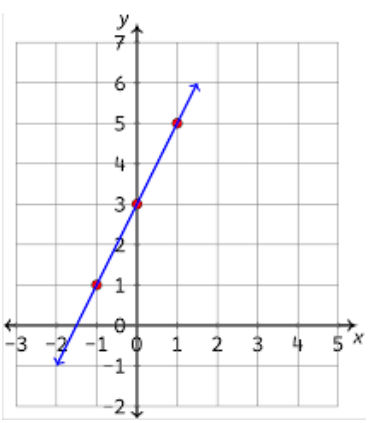
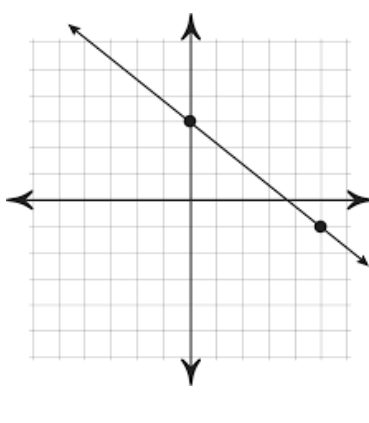
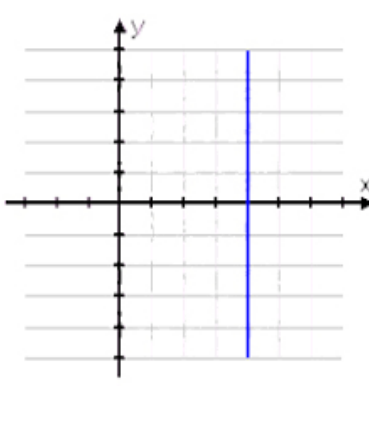
Skill 3: Parallel & Perpendicular Lines



Helpful Video Link:

- [Parallel and Perpendicular Lines](#)
- [Find the equation of a line perpendicular to a line through a point](#)
- The symbol for parallel is \parallel and the symbol for perpendicular is \perp

Practice: For the problems below, identify the slope. Then identify the slope of a line that is parallel and the slope of a line that is perpendicular.

1)	$y = 6x - 1$	2)	$3x + 4y = 12$	3)	Write the equation of a line that is perpendicular to $y = \frac{1}{4}x - 3$ and passes through the point $(2, -10)$.
4)		5)		6)	

Skill 4: Radicals



Helpful Video Link:

→ [Simplifying Radical Expressions](#)

→ [Rationalizing the denominator with a radical](#)

Practice: Simplify the following radicals completely.

1)	$\sqrt{48}$	2)	$2\sqrt{45}$	3)	$2\sqrt{6} + \sqrt{54}$
4)	$2\sqrt{10} \cdot 3\sqrt{5}$	5)	$\frac{5}{\sqrt{6}}$	6)	$\frac{\sqrt{2}}{2\sqrt{3}}$

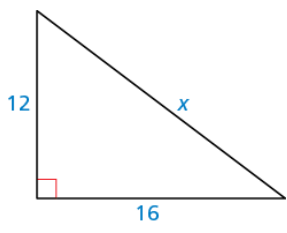

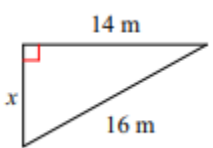
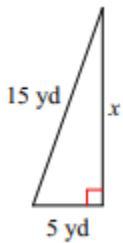
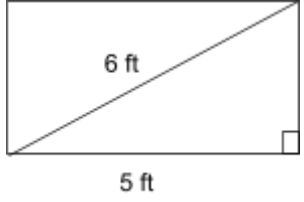
Skill 5: Pythagorean Theorem



Helpful Video Link:

- [Determine the sides of a triangle produce an acute, obtuse or right triangle](#)
- [Finding the missing length of a triangle using pythagorean theorem](#)

Practice:

Solve for x. Leave answers in simplest radical form.			
1)		2)	
3)		4)	
5)	"c" is the hypotenuse of the right triangle ABC with sides a,b,c. Determine the measure of the missing side if $a = 3\sqrt{2}$, $b = \underline{\hspace{2cm}}$, and $c = 6$.		
6)	A rectangle with a length of 5 feet has a diagonal that measures 6 feet. Find the perimeter of the rectangle. Give your answer in simplest radical form. 		

Skill 6: Quadratic Equations (Factoring and Quadratic Formula)



Helpful Video Link:

- [How To Solve Quadratic Equations By Factoring](#)
- [Using the quadratic formula to solve an equation](#)

Practice:

Factor the following expressions.

1) $x^2 + 5x - 36$

2) $25x^2 - 49$

3) $2x^2 + 4x - 48$

Factor and solve the following expressions.

4) $5x^2 - 10x = 0$

5) $2x^2 + 22x + 60 = 0$

Solve the following quadratic equation using the Quadratic Formula.

6) $x^2 - 3x + 5 = 0$

Skill 7: Standardized Assessment Practice

- ★ The problems below are from different state tests. Please try each one.
- ★ If you have trouble, write a note or question to remind yourself where you stopped.
- ★ All problems should have work shown or a note/question.

1) Determine the solution(s) of the equation $x^2 = 36$.
Select **each** correct answer.

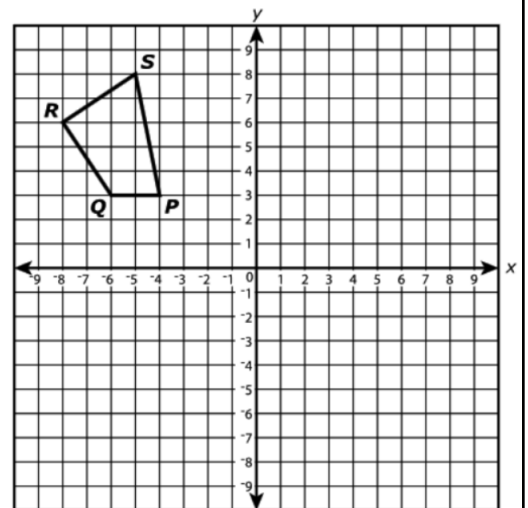
- A. $x = -18$
- B. $x = -6$
- C. $x = -\sqrt{6}$
- D. $x = \sqrt{6}$
- E. $x = 6$
- F. $x = 18$

2) Which expression is equivalent to 5^3 ?
Select **each** correct expression.

- A. $5^7 \cdot 5^{-4}$
- B. $\frac{5^{12}}{5^4}$
- C. $5 + 5^2$
- D. $5^0 \cdot 5^3$
- E. $5^3 - 5^0$

3) Polygon $KLMN$ is the image of polygon $PQRS$ after a 180° rotation.
Which angle of polygon $KLMN$ is congruent to $\angle S$?

- A. $\angle K$
- B. $\angle L$
- C. $\angle M$
- D. $\angle N$



- 4) Lines r , s , and t are shown on the coordinate plane. Each pair represents a system of equations.

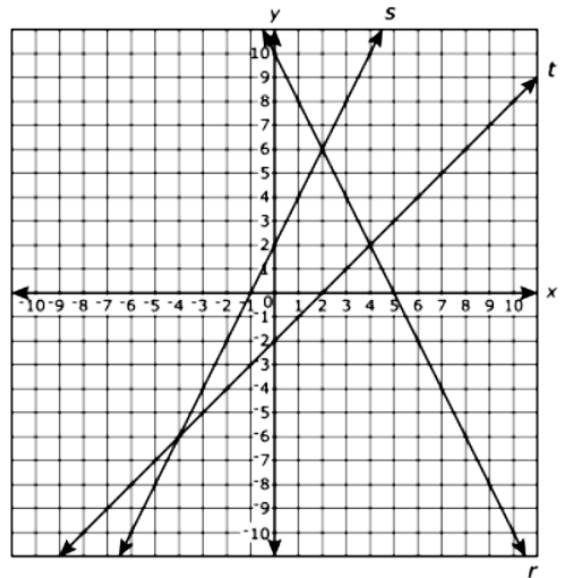
Complete the table with the ordered pair representing the solution to each system of equations.

Solution Bank:

-

Solutions to System of Equations

r and s	s and t	r and t



- 5) Function A is defined by the equation $y = -\frac{2}{3}x + 1$. Which graph is the graph of function A?

