★ 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:

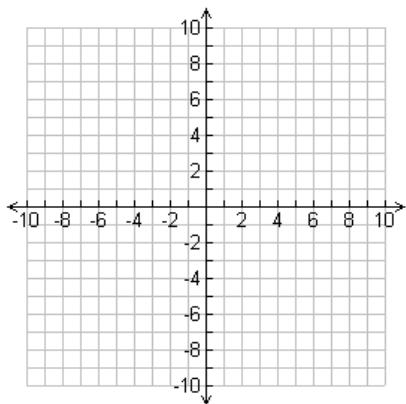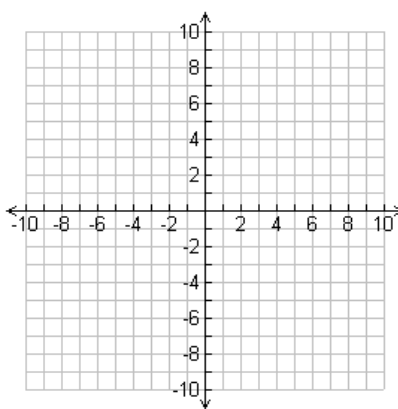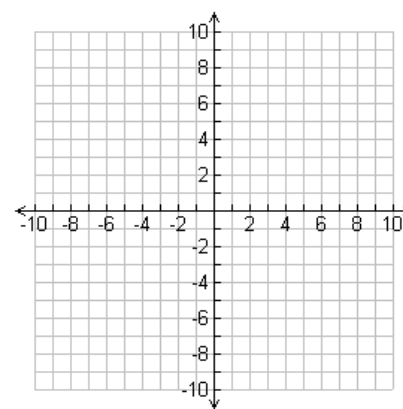| Identify the slope and y-intercept of each linear equation below.		
1) $y = \frac{1}{2}x - 5$	2) $3x + 4y = 12$	3) $y - 4 = 2(x - 5)$

Graph each of the following on the graph provided.

4) $y = 3x - 2$	5) $5x - 2y = 10$	6) $x = -2$

Skill 2: Solving Equations

Practice: Solve the following equations for x.

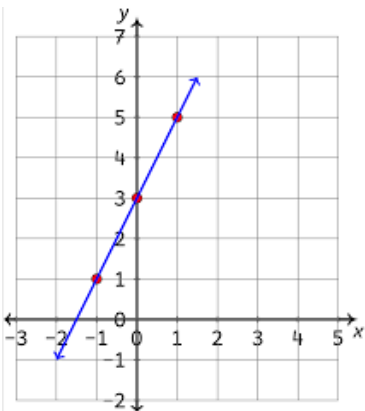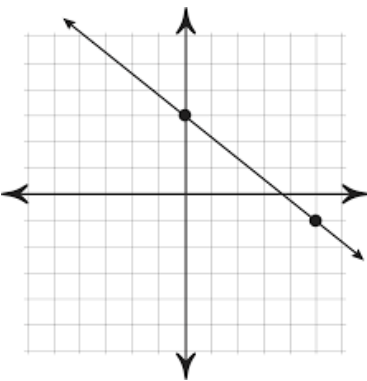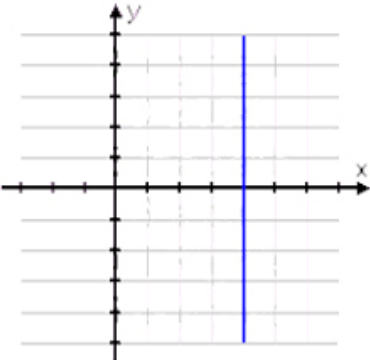|					
1)	$4x + 5 = 2x - 3$	2)	$3(2x - 4) = 4(x - 2)$	3)	$5x - 2 + 3x = 6 + 4x - 1$
4)	$\dfrac{4}{x} = \dfrac{2}{7}$	5)	$\dfrac{20}{x-10} = \dfrac{4}{5}$	6)	$\dfrac{2x}{3} = \dfrac{16}{x}$

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 || and the symbol for perpendicular is ⊥

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

Practice: Simplify the following radicals completely.

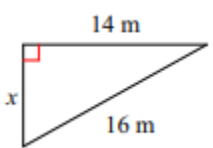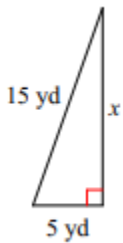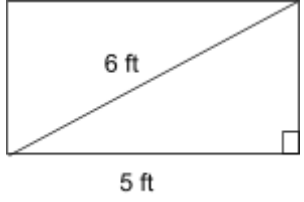| 1) $\sqrt{48}$	2) $2\sqrt{45}$	3) $2\sqrt{6} + \sqrt{54}$
4) $2\sqrt{10} \cdot 3\sqrt{5}$	5) $\dfrac{5}{\sqrt{6}}$	6) $\dfrac{\sqrt{2}}{2\sqrt{3}}$

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) 12 x 16	2) y 5 10
3) 14 m x 16 m	4) 15 yd x 5 yd
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 = _____, 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. 6 ft 5 ft

Skill 6: Quadratic Equations (Factoring and Quadratic Formula)

Helpful Video Link:
➔ <u>How To Solve Quadratic Equations By Factoring</u>
➔ <u>Using the quadratic formula to solve an equation</u>

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

★ 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.

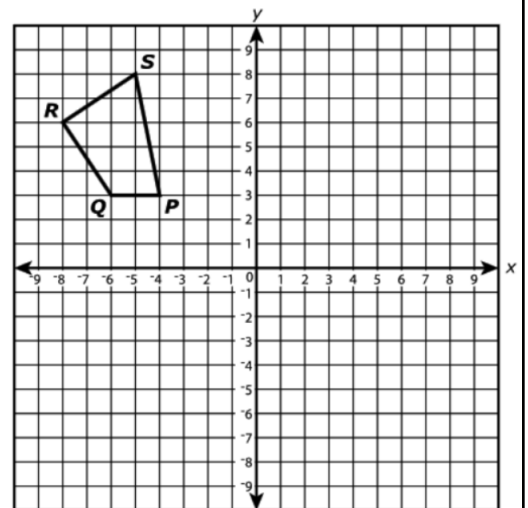|	
1)	Determine the solution(s) of the equation $x^2 = 36$. Select **each** correct answer. ❏ A. $x = -18$ ❏ B. $x = -6$ ❏ C. $x = -\sqrt{6}$ ❏ D. $x = \sqrt{6}$ ❏ E. $x = 6$ ❏ F. $x = 18$
2)	Which expression is equivalent to 5^3? Select **each** correct expression. ❏ A. $5^7 \cdot 5^{-4}$ ❏ B. $\dfrac{5^12}{5^4}$ ❏ 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. $\angle N$

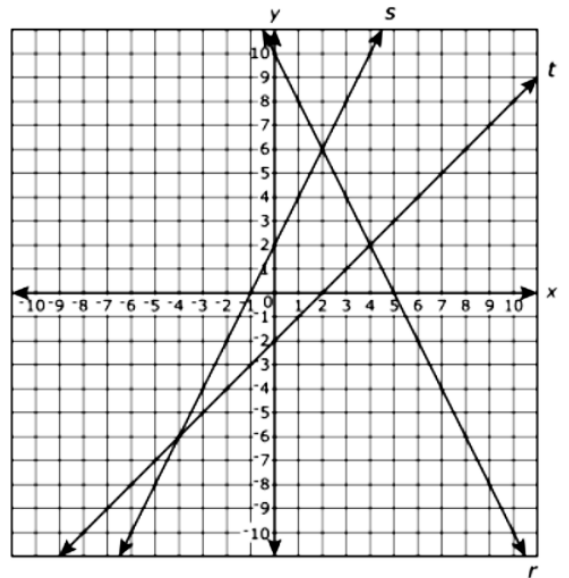**4)** Lines r, s, and t are shown on the coordinate plane. Each pair represents a system of equations.

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

Solution Bank:

| (−6,−4) | (−4,−6) | (2,4) |

| (2,6) | (4,2) | (6,2) |

Solutions to System of Equations

r and s	s and t	r and t

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

A.

C.

B.

D.