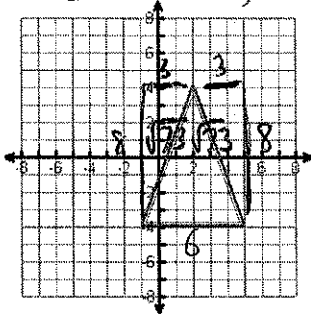
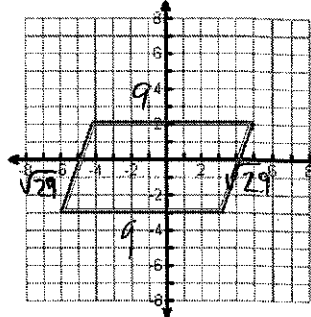
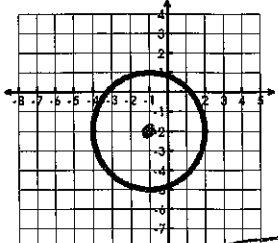


Name: Key

Date: _____

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

What you need to know & be able to do	Things to remember	Problem	Problem
<p>Midpoint</p>	$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$	<p>1. Find the midpoint of (5, 1) and (6, 7).</p> $= \left(\frac{5+6}{2}, \frac{1+7}{2} \right)$ $= \left(\frac{11}{2}, \frac{8}{2} \right)$ $= \boxed{(5.5, 4)}$	<p>2. Find the coordinates of the other endpoint of a segment with an endpoint of (-2, 2) and a midpoint (8, 3).</p> <p>(x, y) (-2, 2) $\boxed{(18, 4)}$</p> $\frac{-2+x}{2} = 8 \cdot 2$ $-2+x = 16$ $x = 18$ $\frac{2+y}{2} = 3 \cdot 2$ $2+y = 6$ $y = 4$
<p>Distance and Applications</p> $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$	<ul style="list-style-type: none"> Find the distance between two people. Pay attention to Direction: North and East are positive, South and West are negative Decide if a point lies on a circle: Find the length of the radius and see if the other distance is the same. 	<p>3. Brandy and Mandy are in the pool playing a game of Marco Polo. Brandy swims 10 ft south and 7 ft east of base. Mandy swims 6 ft north and 5 ft west from where they started together in the middle of the pool. How far apart are Brandy and Mandy?</p> <p>(7, -10)(5, 6) $d = \sqrt{(5-7)^2 + (-10-6)^2}$</p> $= \sqrt{(-2)^2 + (-16)^2}$ $= \boxed{20}$	<p>4. Determine whether Point A (-5, 8) lies on the circle whose center is Point C (1, 2) and which contains the Point P (7, -4).</p> <p>$CP = \sqrt{(7-1)^2 + (-4-2)^2}$ $CA = \sqrt{(-5-1)^2 + (8-2)^2}$</p> $= \sqrt{72}$ $= 8.49$ <p>$\boxed{\text{Yes!}}$</p>
	<ul style="list-style-type: none"> Use Slope and Distance to prove that a shape is a specific type of quadrilateral or triangle Parallel and Perpendicular: Use Slope Congruent: Use Distance 	<p>5. Given that a rhombus has 4 congruent sides and opposite sides parallel, prove the following is a rhombus.</p> <p>Lengths</p> <p>AB: 5 BC: $\sqrt{5^2+3^2} = \sqrt{34}$</p> <p>CD: 5 DA: $\sqrt{5^2+3^2} = \sqrt{34}$</p> <p>Slopes</p> <p>AB: 0 BC: $\frac{5}{3}$</p> <p>CD: 0 DA: $\frac{5}{3}$</p>	

<p>Perimeter and Area</p>	<ul style="list-style-type: none"> Perimeter: Distance Around an Object Area of a Parallelogram: Length * Height Area of a Triangle: $\frac{1}{2}(\text{base})(\text{height})$ Area of a Trapezoid: $\frac{1}{2}(b_1 + b_2)h$ 	<p>6. Find the area and perimeter of the figure.</p> $P = \sqrt{73} + \sqrt{73} + 6 = 23.09 \text{ units}$ $A = \frac{1}{2}bh = \frac{1}{2}(6)(8) = 24 \text{ units}^2$ 	<p>7. Find the area and perimeter of the figure.</p> $P = \sqrt{29} + \sqrt{29} + 9 + 9 = 28.77 \text{ units}$ $A = 9(5) = 45 \text{ units}^2$ 
<p>Writing the Equation of a Line</p>	<ul style="list-style-type: none"> Two Points: Find the slope, plug in slope and one point into $y=mx+b$ and solve for b, then sub m and b into slope intercept form Parallel: Use the slope and solve for b Perpendicular: Use the opposite reciprocal slope and solve for b 	<p>8. Write the equation of line that passes through the points (-5, -1) and (-3, 1).</p> $m = \frac{1 - (-1)}{-3 - (-5)} = \frac{2}{2} = 1$ $-1 = 1(-5) + b$ $-1 = -5 + b$ $4 = b$ $y = x + 4$	<p>9. Write the equation of line that passes through the points (2, 5) and (0, -1).</p> $m = \frac{-1 - 5}{0 - 2} = \frac{-6}{-2} = 3$ $5 = 3(2) + b$ $5 = 6 + b$ $b = -1$ $y = 3x - 1$
<p>Partitions</p> $(x_2 - x_1)\left(\frac{a}{a+b}\right) + x_1$ $(y_2 - y_1)\left(\frac{a}{a+b}\right) + y_1$	<ul style="list-style-type: none"> Use formulas 	<p>10. Write an equation of the line that passes through (-3, 4) and is parallel to $Y = -3x - 1$.</p> $m = -3$ $4 = -3(-3) + b$ $4 = 9 + b$ $b = -5$ $y = -3x - 5$	<p>11. Write an equation of the line that passes through (5, -3) and is perpendicular to $y = -5/2x + 1$.</p> $m = 2/5$ $-3 = \frac{2}{5}(5) + b$ $-3 = 2 + b$ $b = -5$ $y = \frac{2}{5}x - 5$
<p>Circles</p> <p>Standard Form $(x-h)^2 + (y-k)^2 = r^2$</p> <p>General Form $Ax^2 + By^2 + Cx + Dy + E = 0$</p>	<p>Converting standard to general form</p> <ul style="list-style-type: none"> Multiply the binomials out by separating the terms that are square Combine like terms Set equal to 0 	<p>12. Find a point P on the segment with endpoints A(-1, -3) and B(7, 1) that partitions it in a 3:1 ratio.</p> $x \rightarrow -1 + (7 - (-1))\left(\frac{3}{4}\right) = 5$ $y \rightarrow -3 + (1 - (-3))\left(\frac{3}{4}\right) = 0$ $(5, 0)$ 	<p>13. Find a point T on the segment with endpoints C(-4, -6) and D(2, 3) that partitions it in a 2:1 ratio.</p> $x \rightarrow -4 + (2 - (-4))\left(\frac{2}{3}\right) = 0$ $y \rightarrow -6 + (3 - (-6))\left(\frac{2}{3}\right) = 0$ $(0, 0)$ <p>14. Write the equation of the circle in standard form.</p> $(x+1)^2 + (y+2)^2 = 9$ <p>15. Convert your answer from #14 to the General Form.</p> $(x+1)^2 + (y+2)^2 = 9$ $(x+1)(x+1) + (y+2)(y+2) = 9$ $x^2 + 1x + 1x + 1 + y^2 + 2y + 2y + 4 = 9$ $x^2 + 2x + 1 + y^2 + 4y + 4 = 9$ $x^2 + y^2 + 2x + 4y + 5 = 9$ $x^2 + y^2 + 2x + 4y - 4 = 0$