Lesson 4.3 Worksheet

Name: _____

Factor the expression, if possible.

1.) $r^2 + 15r + 56$

2.) $p^2 + 2p + 4$

3.) $b^2 + 3b - 40$

4.) $m^2 + 8m - 65$

5.) $x^2 - 24x + 144$

6.) $x^2 - 36$

7.) $x^2 + 8x + 16$

8.) $z^2 - 121$

9.) $s^2 - 26s + 169$

Solve the equation.

10.) $x^2 - 8x + 12 = 0$

11.) $w^2 - 16w + 48 = 0$

12.) $n^2 - 6n = 0$

Find the roots of the equation.

13.) $14x - 49 = x^2$

14.) $b^2 - 81 = 0$

15.) $0 = x^2 + 6x + 8$

Find the zeros of the function by rewriting the function in intercept form.

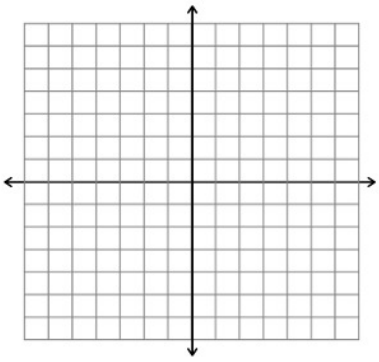
16.) $y = x^2 + 7x - 30$

17.) $f(x) = x^2 + 11x$

18.) $g(x) = x^2 + 19x + 84$

19.) A city's skate park is a rectangle 100 feet long by 50 feet wide. The city wants to triple the area of the skate park by adding the same distance *x* to the length and the width. Write and solve an equation to find the value of *x*. What are the new dimensions of the skate park?

20.) $y = \frac{1}{3}x^2 + 2x - 1$



AOS: _____

vertex: _____

y-int: _____

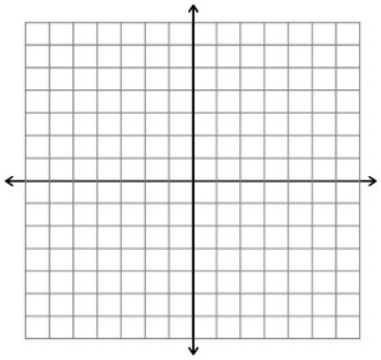
opens: _____

max./min. value: _____

x					
y					

work:

21.) $y = (x + 2)(x - 4)$



AOS: _____

vertex: _____

y-int: _____

opens: _____

max./min. value: _____

y-axis by 2

x					
y					

work:

22.) If an object is propelled straight upward from Earth at an initial velocity of 80 feet per second, its height after *t* seconds is given by the function $h(t) = -16t(t-5)$, where *t* is the time in seconds after the object is propelled and *h* is the objects height.

a.) How many seconds after it is propelled will the object hit the ground?

b.) What is the object's maximum height?

23.) The function $y = -0.03(x-14)^2 + 6$ models the jump of a red kangaroo where *x* is the horizontal distance (in feet) and *y* is the corresponding height (in feet). What is the kangaroo's maximum height? How long is the kangaroo's jump?