

# Questions on Solving Quadratic Equations WKS?

## Module 3 Review Day

Today we are working on our Module 3 Study Guide to get ready for our test Thursday.

$$2) \quad 5v^2 + 9 = v$$

$$5v^2 - v + 9 = 0$$

$$a = 5$$

$$b = -1$$

$$c = 9$$

if calc. gives error is neg.

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4 \cdot 5 \cdot 9}}{2 \cdot 5}$$

$$= \frac{1 \pm \sqrt{1 - 180}}{10} = \frac{1 \pm \sqrt{-179}}{10}$$

$$= \frac{1 \pm \cancel{\sqrt{1}} \cdot \sqrt{179}}{10} = \frac{1 \pm i\sqrt{179}}{10}$$

$$\begin{array}{r} 19) \quad r^2 = r + 56 \\ \quad -r \quad -r \quad -56 \\ \hline \quad \quad -56 \end{array}$$
$$r^2 - r - 56 = 0$$
$$(r - 8)(r + 7) = 0$$
$$\boxed{r = 8, -7}$$

12]  $2x^2 - 7 = 146$

$\frac{+2}{+2}$

$2x^2 = 148$

$\frac{2}{2}$

$\sqrt{x^2} = \sqrt{74}$

$x = \pm \sqrt{74}$

SECONDARY MATH II  
Module 3 Study Guide: Quadratic Equations

Directions: Show ALL work.

Simplify the following expressions using exponent rules and relationships. Write your answers in exponential form with no negative exponents in your answer.

1.  $\frac{5^8}{5^2}$

2.  $x^4 \cdot x^6$

3.  $\frac{7^{-2}y^2}{7^{-8}y}$

Simplify each radical below, using  $i = \sqrt{-1}$  or  $i^2 = -1$  if necessary.

4.  $\sqrt{18}$

5.  $\sqrt[3]{32}$

6.  $\sqrt{-45}$

Simplify the following imaginary/complex numbers.

7.  $(2i)(5i)$

8.  $2i^2$

9.  $(3 + 2i) + (4 - i)$

Simplify the following radicals.

10.  $3\sqrt{2} + 4\sqrt{2} - \sqrt{2}$

11.  $\sqrt{27} - 2\sqrt{3} + 2\sqrt{6}$

12.  $(-4\sqrt{5}) \cdot (2\sqrt{3})$

Solve the following quadratic equations for the x-intercepts (also called roots, zeroes, or solutions) by factoring, completing the square, taking square roots, or using the quadratic formula  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ . Simplify radicals as much as possible and use  $i = \sqrt{-1}$  or  $i^2 = -1$  if necessary. Round any decimals to two decimal places.

13.  $x^2 - 8x = -12$

14.  $n^2 - 24 = 2n$

15.  $5x^2 - 2 = 318$

16.  $7n^2 - 6 = -90$

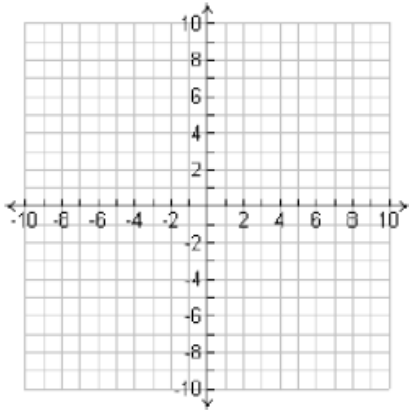
17.  $11x^2 + 4x = -4$

18.  $3n^2 = 12n + 36$

19.  $4a^2 - 8a - 33 = -4$

20.  $n^2 + 20n - 105 = -9$

21. Graph  $f(x) = (x + 2)^2 - 2$

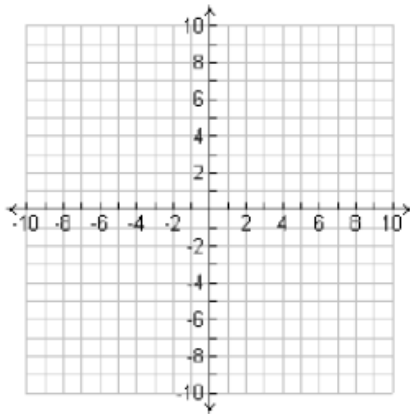


22. For #24, write the quadratic in the following forms:

Standard Form: \_\_\_\_\_

Factored Form: \_\_\_\_\_

23. Graph  $f(x) = x^2 + 3x + 4$

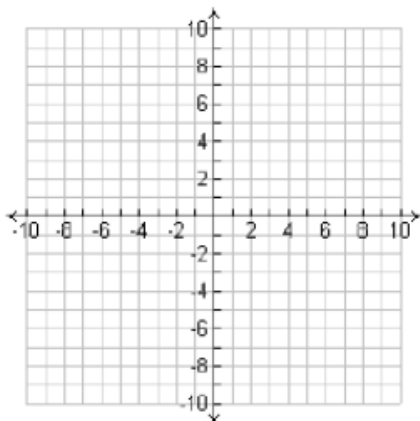


24. For #26, write the quadratic in the following forms:

Vertex Form: \_\_\_\_\_

Factored Form: \_\_\_\_\_

25. Graph  $f(x) = (x - 1)(x - 5)$



26. For #28, write the quadratic in the following forms:

Standard Form: \_\_\_\_\_

Vertex Form: \_\_\_\_\_