

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 Friday.

$$\boxed{7} \quad 8m^2 = 2m - 12$$

$\begin{matrix} -2m & -2m & +12 \\ +12 \end{matrix}$

$a = 8$
 $b = -2$
 $c = 12$

$$8m^2 - 2m + 12 = 0$$

$$X = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \cdot 8 \cdot 12}}{2 \cdot 8}$$

$$= \frac{2 \pm \sqrt{4 - 484}}{16} = \frac{2 \pm \sqrt{-480}}{16} = \frac{2 \pm 4i\sqrt{30}}{16}$$

$\rightarrow \sqrt{16} \cdot \sqrt{30}$
 $\rightarrow 4$

$$= \frac{2}{8} + \frac{4i\sqrt{30}}{16}$$

$$= \frac{1}{8} + \frac{i\sqrt{30}}{4}$$

$$\frac{1}{8} + \frac{i\sqrt{30}}{4}$$

$$\frac{1}{8} - \frac{i\sqrt{30}}{4}$$

$$\boxed{12} \quad 2x^2 - 2 = 146$$
$$\begin{array}{r} +2 \quad +2 \\ \hline 2x^2 = 148 \\ \hline x^2 = \sqrt{74} \\ \hline x = \pm \sqrt{74} \end{array}$$

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

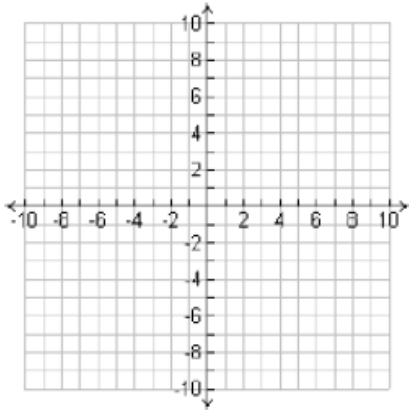
17. $11x^2 + 4x = -4$

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

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

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

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

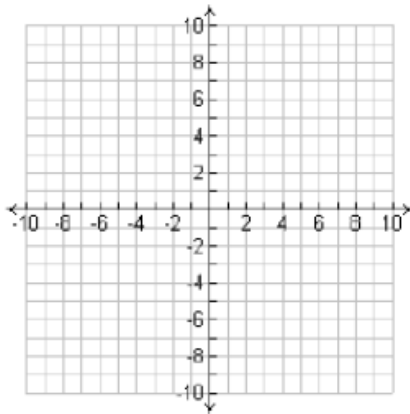


22. For #24, write the quadratic in the following forms:

Standard Form: _____

Factored Form: _____

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

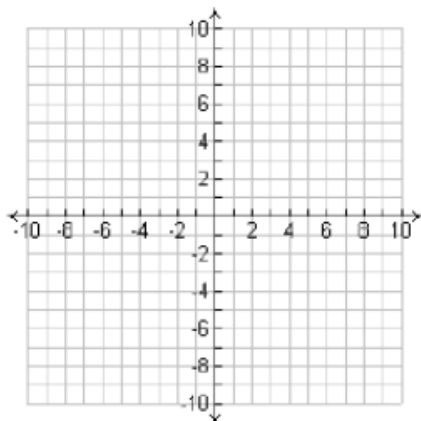


24. For #26, write the quadratic in the following forms:

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: _____