

Grab a Week #3 Packet Bell Ringer

Monday 12/2

$a = -3, b = -8, c = -12$

Solve the Quadratic Equations

1. $3x^2 - 8x - 12 = 0$

$x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4(3)(-12)}}{2(3)}$

$x = \frac{8 \pm \sqrt{208}}{6}$

$\sqrt{208} = 4\sqrt{13}$

$x = \frac{8 \pm 4\sqrt{13}}{6} = \frac{4 \pm 2\sqrt{13}}{3}$

2. $(3x + 5)^2 = 9$

$3x + 5 = \pm 3$

$3x + 5 = 3 \implies 3x = -2 \implies x = -\frac{2}{3}$

$3x + 5 = -3 \implies 3x = -8 \implies x = -\frac{8}{3}$

3. $y = -4x^2 + 3x + 6$

Find the discriminant and identify the number of solutions

$b^2 - 4ac$

$a = -4, b = 3, c = 6$

$(3)^2 - 4(-4)(6)$

$9 + 96$

$105 \rightarrow \text{pos}$

2 solutions (x-int)

4.5 online hw due tomorrow

Week #2 Packet due tomorrow!

Standards 4A and 4B Opportunity 1
Wednesday

correct simplify radicals ws

Simplifying Radicals Key

Name: _____

Simplify the radicals and write your answers in EXACT form.

1. $2\sqrt{27}$

2. $\sqrt{12}$

3. $3\sqrt{8}$

$6\sqrt{3}$

$2\sqrt{3}$

$6\sqrt{2}$

4. $5\sqrt{44}$

5. $2\sqrt{36a^4b}$

6. $\sqrt[3]{8x^3y^2}$

$10\sqrt{11}$

$12a^2\sqrt{b}$

$2x\sqrt[3]{y^2}$

7. $\sqrt{a^3b^4}$

8. $2\sqrt[3]{x^5y^6z^{10}}$

9. $\sqrt[4]{32x^5y^{11}}$

$ab^2\sqrt{a}$

$6xy^2z^3\sqrt[3]{x^2z}$

$2xy^2\sqrt[4]{2xy^3}$

10. $\sqrt{\frac{49}{y^2}}$

11. $\sqrt{\frac{25y^3}{x^4}}$

12. $\frac{3}{\sqrt{6}}$

$\frac{7}{y}$

$\frac{5y\sqrt{y}}{x^2}$

$\frac{\sqrt{6}}{2}$

13. $\frac{6+\sqrt{45}}{3}$

14. $\frac{10+\sqrt{50}}{5}$

15. $\frac{6+\sqrt{12}}{2}$

$2+\sqrt{5}$

$2+\sqrt{2}$

$3+\sqrt{3}$

16. $2\sqrt{50ab^5}$

17. $-\sqrt{49x^2}$

18. $\sqrt{80x^3}$

$10b^2\sqrt{2ab}$

$-7x$

$4x\sqrt{5x}$

/4

19. True or False.

a. $\frac{\sqrt{15}}{3} = \sqrt{3}$	False	b. $\sqrt[3]{9} = 3$	False
c. $\sqrt[6]{16} = \sqrt[3]{4}$	True	d. $\frac{2+\sqrt{6}}{2} = 1 + \sqrt{6}$	False
e. $\sqrt{4} = \sqrt{2}$	False	f. $\sqrt{12} = 2\sqrt{6}$	False
g. $\sqrt[3]{-27} = -3$	True	h. $\sqrt{-25} = -5$	False
★ i. $\sqrt{283} = 17$	False	j. $\sqrt{18} = 9\sqrt{2}$	False
k. $\frac{6}{\sqrt{5}} = \frac{\sqrt{30}}{5}$	False	★ l. $\frac{8}{\sqrt{2}} = 4\sqrt{2}$	True

Simplify.

20. $5\sqrt{7} + \sqrt{7}$

21. $\sqrt{3} + \sqrt{27}$

22. $2\sqrt{3} - 4\sqrt{18}$

$6\sqrt{7}$

$4\sqrt{3}$

$2\sqrt{3} - 12\sqrt{2}$

23. $\sqrt{2}(\sqrt{8})$

24. $3\sqrt{2}(-1\sqrt{5} + 3\sqrt{20})$

25. $2\sqrt{2}(\sqrt{5} + 9\sqrt{2})$

4

$15\sqrt{10}$

$2\sqrt{10} + 36$

4
+ 8 + 2 completion

Which method would we use to solve:

1. $3x^2 + 9x = 0$

$3x(x+3) = 0$

Factor

2. $4(x-5)^2 = 36$

$4(x-5)(x-5)$

Square Root

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

2
^
Quad

4. $-x^2 - 4x + 7 = 0$

Quad

-7
^
 -1 -7
 -1 7

5. $x^2 - 28 = 0$

√

6. $x^2 + 6x + 9 = 0$

9
^
3
Factor

$(x+3)(x+3) = 0$

$x = -3$

Solving Quadratic Equations Review ws...

Write the equation in standard form. Identify a, b, and c and then find the discriminant. Determine if the equation has one real, two real or no real solutions.

$$2. -5x^2 + 7x - 13 = 2$$

$$-5x^2 + 7x - 15 = 0$$

$$a = -5$$

$$b = 7$$

$$c = -15$$

$$(7)^2 - 4(-5)(-15)$$

$$49 + 20(-15)$$

$$49 - 300$$

$$-251$$

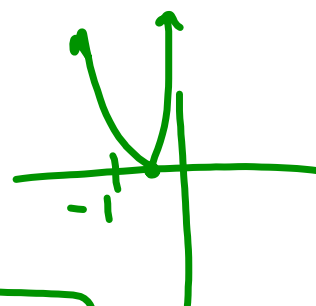
no solution

Use the quadratic formula to solve the equation. Answers should be in exact form (no decimals).

$$7. \quad 4x^2 + 2x = -2x - 1$$

$$4x^2 + 4x + 1 = 0$$

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



$$x = \frac{-4 \pm \sqrt{0}}{8} \quad x = -\frac{4}{8} = \boxed{-\frac{1}{2} = x}$$

8-19. Solve each quadratic equation using any method you choose.

9. $3x^2 + 2x = 0$

$$x(3x+2) = 0$$

$$x = 0 \quad 3x + 2 = 0$$

$$\frac{3x}{3} = \frac{-2}{3}$$

$$x = -\frac{2}{3}$$

8-19. Solve each quadratic equation using any method you choose.

$$12. \quad 3x^2 + 2x = x^2 + x + 1$$

~~$-x^2$~~ ~~$-x$~~ ~~$-x^2$~~ ~~$-x$~~ ~~$+1$~~
 ~~-1~~

$$\underline{2x^2 + x - 1 = 0}$$

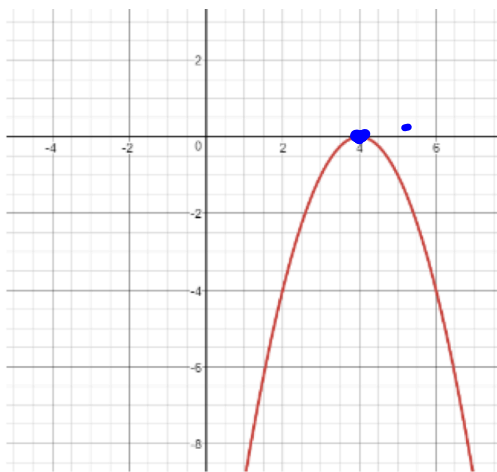
$$x = \frac{-1 \pm \sqrt{1+8}}{2(2)}$$

$$x = \frac{-1 \pm \sqrt{9}}{4} = \frac{-1 \pm 3}{4}$$

$\frac{-1+3}{4} = \frac{2}{4} = \frac{1}{2}$ $\frac{-1-3}{4} = \frac{-4}{4} = -1$

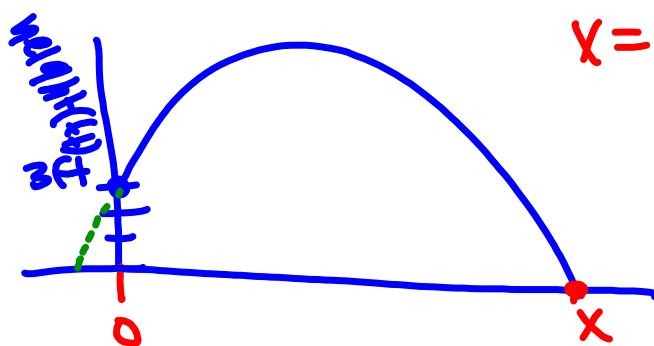
8-19. Solve each quadratic equation using any method you choose.

19.



$$x = 4$$

20. A contestant tosses a horseshoe from one pit to another with an initial vertical velocity of 50 feet per second. The horseshoe is released 3 feet above the ground. Use the model $h = -16t^2 + 50t + 3$ where h is the height (in feet) and t is the time (in seconds) to tell how long the horseshoe was in the air. Round to the nearest hundredth (sketch a graph to help visualize if necessary!).



$$x = \frac{-(-50) \pm \sqrt{(-50)^2 - 4(-16)(3)}}{2(-16)}$$

$$\approx 3.2 \text{ sec.}$$

due Wednesday

Solving Quadratic Equations Review ws

Write the equation in standard form. Identify a, b, and c and then find the discriminant. Determine if the equation has one real, two real or no real solutions.

1. $2x^2 - 4x + 2 = 0$

2. $-5x^2 + 7x - 13 = 2$

3. $4x^2 - 8 = 6x^2 - 3x$

4. $-2x = x^2 + 3x - 7$

Use the quadratic formula to solve the equation. Answers should be in **exact form** (no decimals).

5. $x^2 + 4x = 2$

6. $2x^2 - 8x = 1$

7. $4x^2 + 2x = -2x - 1$

8-19. Solve each quadratic equation using any method you choose.

8. $2(x - 6)^2 = 32$

9. $3x^2 + 2x = 0$

10. $x^2 + 12 = 13$

11. $x^2 - 4x + 3 = 0$

12. $3x^2 + 2x = x^2 + x + 1$

13. $5x^2 - 9x = -3$

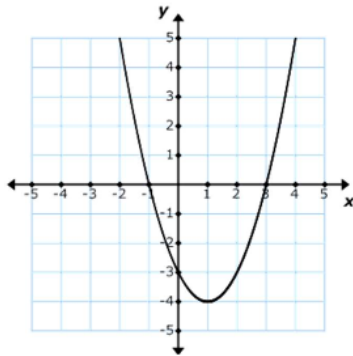
14. $x^2 - 24 = 0$

15. $-4t^2 + 16t = 0$

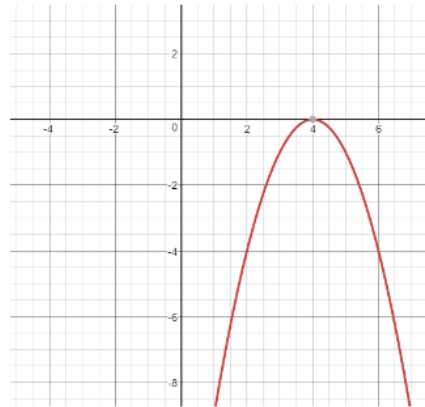
16. $-x^2 + 3x + 4 = -2$

17. $4(x - 5)^2 - 2 = 62$

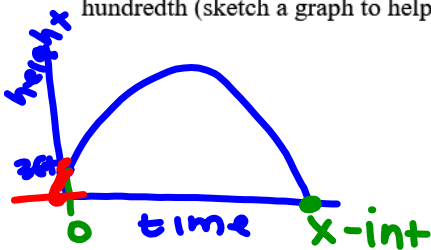
18.



19.



20. A contestant tosses a horseshoe from one pit to another with an initial vertical velocity of 50 feet per second. The horseshoe is released 3 feet above the ground. Use the model $h = -16t^2 + 50t + 3$ where h is the height (in feet) and t is the time (in seconds) to tell how long the horseshoe was in the air. Round to the nearest hundredth (sketch a graph to help visualize if necessary!).



(time, height)

$$x = \frac{- (50) \pm \sqrt{(50)^2 - 4(-16)(3)}}{2(-16)}$$

$x \approx -.05$ $x \approx 3.19$ seconds

21. For the following problem $2x^2 - 10x + 8 = 0$

a) Solve the equation by factoring:

b) The quadratic formula:

c) Explain what you notice:

