Algebra II

Section 1.3

Square Roots

Nov 1-10:49 AM

(15) $x = 0$ (0,0) $x = -5$ (-5,0)

(16) $x = 1/4$ (1/4,0) $x = -3$ (-3,0)

(17) $x = 2, -6$

(18) $x = -4/3, 1/2$

(19) $(x-3)(x-5)$

(20) $(x+2)(x-9)$

(21) $(4x-3)(x+1)$

(22) $(x+3)(x+7)$

(23) $(2x+3)(6x-5)$

(24) $x(x+4)$

(25) $x^2 - 7x = 0$

(26) $12x^2 + 17x - 5 = 0$

(27) $x^2 - 6x - 16 = 0$

(28) $3x^2 + 20x - 7 = 0$

14 pts

Nov 2-9:28 AM

Bell Ringer (Turning it in so put your name on it)

1. Financing the cost of an automobile, C, is equal to the sticker price, S, plus interest, I. The sticker price is equal to the base price, B, plus optional features, F. Write a system of equations that models this situation?

$C = S + I$

$S = B + F$

2. Factor $x^2 + 3x - 40$

$(x-5)(x+8)$

Nov 1-10:50 AM

Today we will be taking the square roots of numbers, simplifying square roots, and using operations on square roots. (Square roots are also called Radicals)

Find the square root.

1. $\sqrt{64}$ 8

2. $\sqrt{81}$ 9

But not all numbers will be perfect. (Round to nearest tenth)

3. $\sqrt{60} \approx 7.7$

$60 = 5 \cdot 12$

$12 = 3 \cdot 4$

$4 = 2 \cdot 2$

$2\sqrt{15}$

4. $-\sqrt{15} \approx -3.9$

$15 = 3 \cdot 5$

$-\sqrt{15}$

Nov 1-11:01 AM

Simplify each expression.

1. $\sqrt{12}$ → $2\sqrt{3}$
2. $-\sqrt{32}$ → $-4\sqrt{2}$
3. $\sqrt{\frac{25}{36}} = \frac{\sqrt{25}}{\sqrt{36}}$ → $\frac{5}{6}$
4. $\sqrt{3} \cdot \sqrt{12}$ → $\sqrt{36} = 6$
5. $\frac{\sqrt{500}}{\sqrt{5}}$ → $\sqrt{100}$ → 10
6. $-\sqrt{25} \cdot \sqrt{2}$ → $-5\sqrt{2}$

Nov 1-11:12 AM

Simplify by rationalizing the denominator.

1. $\frac{3\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$ → $\frac{3\sqrt{10}}{\sqrt{4}}$ → $\frac{3\sqrt{10}}{2}$
2. $\frac{\sqrt{2}}{\sqrt{8}} = \sqrt{\frac{2}{8}}$ → $\sqrt{\frac{1}{4}}$ → $\frac{\sqrt{1}}{\sqrt{4}}$ → $\frac{1}{2}$
3. $\frac{2\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$ → $\frac{2\sqrt{6}}{\sqrt{9}}$ → $\frac{2\sqrt{6}}{3}$

Nov 1-11:20 AM

Add and Subtract Square Roots (Radicals). (Must have LIKE roots)

1. $9\sqrt{3} + 7\sqrt{3}$ → $16\sqrt{3}$
2. $6\sqrt{5} - \sqrt{20}$ → $6\sqrt{5} - 2\sqrt{5}$ → $4\sqrt{5}$
3. $\sqrt{12} - 2\sqrt{2} - 5\sqrt{3}$ → $2\sqrt{3} - 2\sqrt{2} - 5\sqrt{3}$ → $-3\sqrt{3} - 2\sqrt{2}$

Nov 1-11:23 AM

Conclusion

1. How do you simplify a radical?
2. Can you leave a radical in the denominator?
3. How do you get rid of a radical in the denominator?
4. When you add or subtract radicals, what must be true?
5. ??????s

Nov 1-11:27 AM

Solve

① $\sqrt{x^2} = \sqrt{36}$

$x = \pm 6$

② $-(x-2)^2 + 16 = 0$

$\frac{-1(x-2)^2}{-1} = \frac{-16}{-1}$

$\sqrt{(x-2)^2} = \sqrt{16}$

$x - 2 = \pm 4 + 2$

$x = 6, -2$

Nov 2-10:00 AM

③ $\frac{3(x-1)^2}{3} = \frac{75}{3}$

$\sqrt{(x-1)^2} = \sqrt{25}$

$x - 1 = \pm 5 + 1$

$x = 6, -4$

Nov 2-10:04 AM

$g(x) = (x+2)^2 + 3$

opp

Vertex $(-2, 3)$

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

$-3 \quad -3$

$\sqrt{-3} = \sqrt{(x+2)^2}$

No zeros

Nov 2-10:07 AM

Assignment

Worksheet 1.3

Nov 1-11:30 AM