A1 S2 w10d4 10.2 Simplifying Radicals

Alg I Week 10 Friday Warm Up

1. Skill 17: Solve the Quadratic by Completing the square. Leave answers in simplified radical form or as an integer. $k^2 + 6k - 59 = 0$

2. Simplify the radicals.

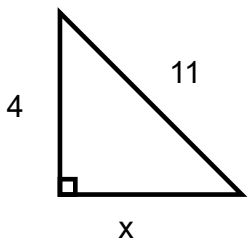
   a. $\sqrt{32}$

   b. $5\sqrt{24}$

   c. $\sqrt{3} \cdot \sqrt{6}$

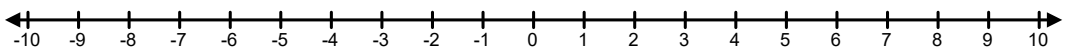
   d. $4\sqrt{8} \cdot 3\sqrt{6}$

3. Use the Pythagorean Theorem to solve.



4. Skill 7: Write the equation of a line perpendicular to $y = \frac{2}{5}x + 2$ and passes through the point (6, -7)

5. Skill 4: Solve and graph the answer on a number line. $|x - 5| \leq 3$



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Alg 1 Week 10 Fri Notes 10-2 Simplifying Radicals

Sometimes you can simplify radical expressions that contain variables. A variable with an even exponent is a perfect square. A variable with an odd exponent is the product of a perfect square and the variable. For example, $n^3 = n^2 \cdot n$, so $\sqrt{n^3} = \sqrt{n^2 \cdot n}$. In this lesson, assume that all variables in radicands represent nonnegative numbers.

Problem 2 Removing Variable Factors

What is the simplified form of $\sqrt{54n^7}$?

Got It? **2.** What is the simplified form of $-m\sqrt{80m^9}$?

You can use the Multiplication Property of Square Roots to write $\sqrt{a} \cdot \sqrt{b} = \sqrt{ab}$.

Problem 3 Multiplying Two Radical Expressions

What is the simplified form of $2\sqrt{7t} \cdot 3\sqrt{14t^2}$?

$$2\sqrt{7t} \cdot 3\sqrt{14t^5}$$

Got It? **3.** What is the simplified form of each expression in parts (a)–(c)?

a. $3\sqrt{6} \cdot \sqrt{18}$ **b.** $\sqrt{2a} \cdot \sqrt{9a^3}$ **c.** $7\sqrt{5x} \cdot 3\sqrt{20x^5}$

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Simplifying Radicals 10.2

Simplify each radical expression. Show all work!

1. $\sqrt{169}$
2. $\sqrt{200}$
3. $\sqrt{125}$
4. $-5\sqrt{112}$
5. $\sqrt{68}$
6. $3\sqrt{121}$
7. $\sqrt{63t^4}$
8. $-2b\sqrt{136b^2}$

Simplify each product.

9. $\sqrt{30}\cdot\sqrt{6}$
10. $\sqrt{5}\cdot\sqrt{70}$
11. $2\sqrt{3}\cdot\sqrt{96}$
12. $-4\sqrt{7}\cdot\sqrt{42}$
13. $\sqrt{4a}\cdot\sqrt{12a^5}$