

Key!

Honors Geometry - Warm-Ups

Tuesday, 11/29

Simplifying Radicals: Simplify each of the following radical expressions.

1.  $\sqrt{52} = \sqrt{4 \cdot 13} = 2\sqrt{13}$

2.  $4\sqrt{54} = 12\sqrt{6}$

3.  $\sqrt{70} = \sqrt{70}$

4.  $-2\sqrt{144} = -2 \cdot 12 = -24$

5.  $\sqrt{72x^6y^9z} = 6x^3y^4\sqrt{2yz}$

6.  $3\sqrt{50x^4} = 15x^2\sqrt{2}$

7.  $-3\sqrt{28x^5y^3} = -6x^2y\sqrt{7xy}$

8.  $-7\sqrt{24x^2y^8} = -14xy^4\sqrt{6}$

Wednesday, 11/30

Multiplying Radicals: Simplify each of the following radical expressions using multiplication.

1.  $\sqrt{3} \cdot \sqrt{7} = \sqrt{21}$

2.  $\sqrt{6} \cdot \sqrt{6} = \sqrt{36} = 6$

3.  $(6\sqrt{11})^2 = 36 \cdot 11 = 396$

4.  $\sqrt{6} \cdot \sqrt{9} = \sqrt{54} = 3\sqrt{6}$

5.  $\sqrt{2a^2} \cdot \sqrt{10a^3} = 2a^2\sqrt{5a}$

6.  $(2\sqrt{12})^2 = 2^2 \cdot 12 = 48$

7.  $5\sqrt{11xy^3} (2\sqrt{3x^2y}) = 10xy^2\sqrt{33x}$

8.  $2\sqrt{12} \cdot 3\sqrt{60} = 72\sqrt{5}$

Thursday, 12/1

Dividing Radicals: Simplify each of the following radical expressions using division.

1.  $\sqrt{\frac{72}{5}} = \frac{\sqrt{72}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{360}}{5} = \frac{6\sqrt{10}}{5}$

2.  $\sqrt{\frac{60}{15}} = \frac{\sqrt{60}}{\sqrt{15}} = \sqrt{4} = 2$

3.  $\frac{\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{10}}{2}$

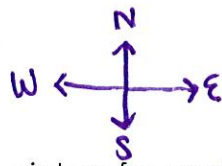
4.  $\frac{8}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{8\sqrt{3}}{3}$

5.  $\frac{2\sqrt{2}}{3\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{6}}{9}$

6.  $\frac{8}{\sqrt{144}} = \frac{8}{12} = \frac{2}{3}$

7.  $\sqrt{\frac{20}{80}} = \frac{\sqrt{20}}{\sqrt{80}} = \frac{\sqrt{1}}{\sqrt{4}} = \frac{1}{2}$

8.  $\frac{\sqrt{2}}{7\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{10}}{35}$

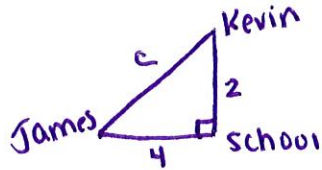


Key!

Friday, 12/2

Pythagorean Theorem Applications: Draw a picture for each scenario. Put your answers in simplest radical form.

1. Kevin is standing 2 miles due north of the school. James is standing 4 miles due west of the school. What is the distance between Kevin and James?



$$2^2 + 4^2 = c^2$$

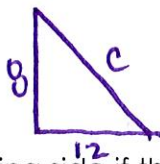
$$4 + 16 = c^2$$

$$\sqrt{c^2} = \sqrt{20}$$

$$c = \sqrt{20} = \sqrt{4 \cdot 5} = \boxed{2\sqrt{5} \text{ miles}}$$

2. Two sides of a right triangle are 8 and 12.

A. Find the missing side if these are the lengths of the legs.



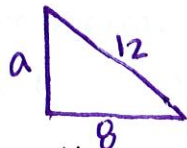
$$8^2 + 12^2 = c^2$$

$$\sqrt{c^2} = \sqrt{208}$$

$$64 + 144 = c^2$$

$$c = \sqrt{208} = \sqrt{16 \cdot 13} = \boxed{4\sqrt{13}}$$

B. Find the missing side if these are the length so a leg and hypotenuse.



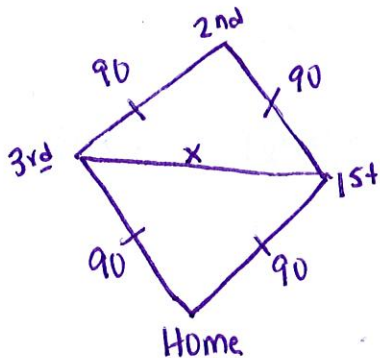
$$a^2 + 8^2 = 12^2$$

$$\sqrt{a^2} = \sqrt{80}$$

$$a^2 + 64 = 144$$

$$a = \sqrt{80} = \sqrt{16 \cdot 5} = \boxed{4\sqrt{5}}$$

3. A baseball diamond is a square with sides of 90 feet. What is the shortest distance between first base and third base? Round to one decimal place.



$$45-45-90 \triangle!$$

$$\boxed{x = 90\sqrt{2} \text{ ft}}$$

(or you could use pythagorean thm)