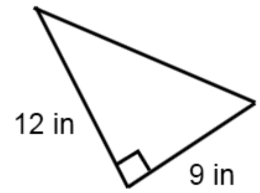
Chapter 11 Review Checklist

Are you comfortable with each type of problem listed below? If yes, complete the example and check off the box. If not, review your notes for that section, try the example and check your answer to make sure you are correct. Any topics that you are still unsure about, you should be sure to follow up in class.

11.4 Pythagorean Theorem

□ I can find the missing hypotenuse of a right triangle (11.4) **Ex:**



$a^2 + b^2 = c^2$

$9^2 + 12^2 = c^2$

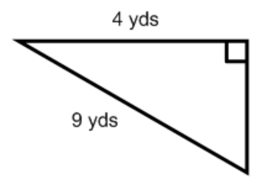
$81 + 144 = c^2$

$225 = c^2$

$\sqrt{225} = \sqrt{c^2}$

$c = 15$ in

□ I can find the missing leg of a right triangle. (11.4) **Ex:**



$a^2 + b^2 = c^2$

$a^2 + 4^2 = 9^2$

$a^2 + 16 = 81$

$\underline{-16 \quad -16}$

$a^2 = 65$

$\sqrt{a^2} = \sqrt{65}$

$a = 8.06$ yd

□ I can decide if three sides could possibly form a right triangle. (11.4) **Ex:** 13, 12, 5

$a^2 + b^2 = c^2$

$5^2 + 12^2 = 13^2$ *don't forget that the biggest number must be c (the hypotenuse)

$25 + 144 = 169$

$169 = 169$

Yes, these sides could form a right triangle

11.2 Simplifying Radicals

□ I can simplify radicals using the product property. (11.2)

Ex: $\sqrt{68}$

$\sqrt{4} \cdot \sqrt{17}$

$2\sqrt{17}$

Ex: $3\sqrt{32}$

$3\sqrt{16} \cdot \sqrt{2}$

$3 \cdot 4\sqrt{2}$

$12\sqrt{2}$

Ex: $2\sqrt{12} \cdot 4\sqrt{20}$

$8\sqrt{240}$

$8\sqrt{16} \cdot \sqrt{15}$

$8 \cdot 4\sqrt{15}$

$32\sqrt{15}$

Ex: $7\sqrt{5x^2yz^4} \cdot 2\sqrt{8}$

$14\sqrt{40x^2yz^4}$

$14\sqrt{4} \cdot \sqrt{10} \cdot \sqrt{x^2} \cdot \sqrt{y} \cdot \sqrt{z^4}$

$14 \cdot 2xz^2\sqrt{10} \cdot \sqrt{y}$

$28xz^2\sqrt{10y}$

□ I can simplify radicals using the quotient property. (11.2)

Ex: $\sqrt{\frac{8}{25}}$

$\frac{\sqrt{8}}{\sqrt{25}} = \frac{\sqrt{4}\cdot\sqrt{2}}{5} = \frac{2\sqrt{2}}{5}$

Ex: $\sqrt{\frac{100}{121}}$

$\frac{\sqrt{100}}{\sqrt{121}} = \frac{10}{11}$

□ I can rationalize the denominator. (11.2)

Ex: $\sqrt{\frac{24}{7}}$

$\frac{\sqrt{24}}{\sqrt{7}} = \frac{\sqrt{4}\cdot\sqrt{6}}{\sqrt{7}} = \frac{2\sqrt{6}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{2\sqrt{42}}{7}$

□ I can perform operations with radicals. (11.2 continued)

Ex: a) $2\sqrt{7} + 3\sqrt{63}$

$2\sqrt{7} + 3\sqrt{9} \cdot \sqrt{7}$
$2\sqrt{7} + 3 \cdot 3\sqrt{7}$
$2\sqrt{7} + 9\sqrt{7}$
$11\sqrt{7}$

b) $\sqrt{3}(2 + \sqrt{12})$

$2\sqrt{3} + \sqrt{36}$
$2\sqrt{3} + 6$

ACC only – c) $(\sqrt{7} + \sqrt{2})(\sqrt{7} - 3\sqrt{2})$

$\sqrt{49} - 3\sqrt{14} + \sqrt{14} - 3\sqrt{4}$
$7 + -3\sqrt{14} + 1\sqrt{14} - 3 \cdot 2$
$7 - 2\sqrt{14} - 6$
$1 - 2\sqrt{14}$