

Algebra: Ch. 12 Review

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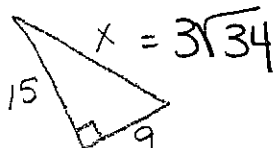
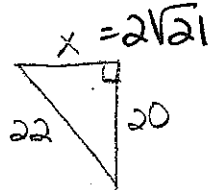
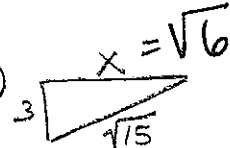
Simplify.

- ① $\frac{\sqrt{99}}{3\sqrt{11}}$ ② $\frac{\sqrt{420}}{2\sqrt{105}}$ ③ $\frac{\sqrt{1250}}{25\sqrt{2}}$ ④ $\sqrt{\frac{1}{5}} \frac{\sqrt{5}}{5}$ ⑤ $\sqrt{6} \cdot 4\sqrt{24}$
 ⑥ $\sqrt{\frac{3}{4}} \cdot \sqrt{\frac{4}{5}}$ ⑦ $\frac{\sqrt{16b^4}}{4b^2}$ ⑧ $\frac{\sqrt{124y^6w^7}}{2y^3w^3\sqrt{31w}}$ ⑨ $\frac{3}{5-\sqrt{2}}$ ⑩ $\frac{6x}{5+\sqrt{x}}$ $\frac{30x-6\sqrt{x}}{25-x}$
 ⑪ $6\sqrt{5} - 2\sqrt{5} + 8\sqrt{5}$ ⑫ $4\sqrt{3} + 2\sqrt{12}$ ⑬ $5\sqrt{128} + 2\sqrt{18}$ $46\sqrt{2}$
 ⑭ $\sqrt{27} + \sqrt{48} + \sqrt{12}$ ⑮ $2\sqrt{32} + 3\sqrt{50} - 3\sqrt{18}$ ⑯ $\sqrt{14} - \sqrt{\frac{2}{7}}$ $\frac{6\sqrt{14}}{7}$

Solve for x. Leave answers in simplest radical form.

- ⑰ $x^2 = 40$ $\pm 2\sqrt{10}$ ⑱ $\sqrt{-1+2x} = 2-x$ $\frac{1}{2} \text{ ex. 5}$ ⑲ $\sqrt{x} = x-2$ 4 ex 1
 ⑳ $\sqrt{x^2-4x+5} = x + \frac{5}{4}$ ㉑ $\sqrt{x^2+4x+12} = x+4$ ㉒ $\sqrt{x^2+5x-2} = 3-x$

Find the missing side lengths. Leave answers in simplest radical form.

- ㉓  $x = 3\sqrt{34}$ ㉔  $x = 2\sqrt{21}$ ㉕  $x = \sqrt{6}$

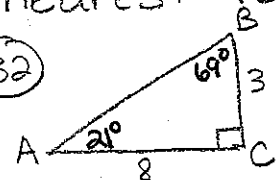
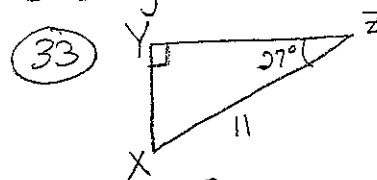
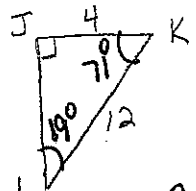
Find the distance between each pair of points. Leave answers in simplest radical form.

- ㉖ $(5, -1), (11, 7)$ 10 ㉗ $(-3, 8), (5, 4)$ ~~4\sqrt{5}~~
 ㉘ $(4\sqrt{5}, 7), (6\sqrt{5}, 1)$ $2\sqrt{14}$ ㉙ $(3, \frac{3}{7}), (4, -\frac{2}{7})$ $\frac{\sqrt{74}}{7}$

Find the value of a if the points with the given coordinates are the indicated distance apart.

- ㉚ $(3, -1), (a, 7), d = 10$ $a = 9 \text{ or } -3$ ㉛ $(6, -3), (-3, a), d = \sqrt{130}$ $a = -10, 4$

Solve each right triangle. State side lengths to the nearest tenth and angle measures to the nearest degree.

- ㉜  $\angle A = 21^\circ$ $\angle B = 69^\circ$ $AB = 8.4 \text{ or } 8.6$
 ㉝  $\angle X = 63^\circ$ $YZ = 9.8$
 ㉞  $\angle L = 19^\circ$ $\angle K = 71^\circ$ $JL = 11.6$