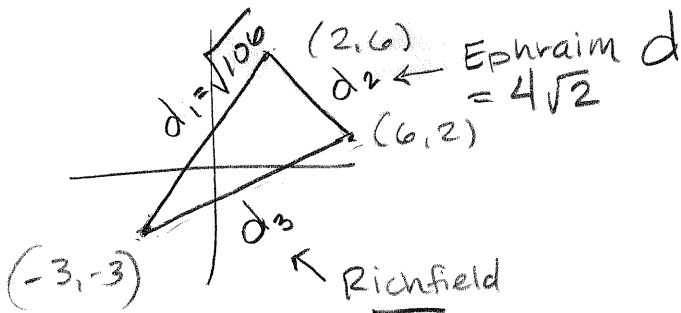
10/24/2012 - Sec 8.4 Math 1010

snow.edu/janaleej/1010

#30
~~#125~~
#128
#100

#30 $\sqrt[3]{-\frac{216}{125}} = \frac{\sqrt[3]{-216}}{\sqrt[3]{125}} = \boxed{-\frac{6}{5}}$

#125 Hint: $\sqrt{K} + \sqrt{K} = 2\sqrt{K}$



$(x_1, y_1) = (-3,-3)$, $(x_2, y_2) = (2,6)$

$d_1 = \sqrt{(2+3)^2 + (6+3)^2}$

$= \sqrt{5^2 + 9^2}$

$= \sqrt{25 + 81}$

$= \sqrt{106}$

106 = 2 · 53

Ephraim

$(x_2, y_2) = (6,2)$ to $(x_1, y_1) = (2,6)$

$d_2 = \sqrt{(6-2)^2 + (2-6)^2}$

$\sqrt{(4)^2 + (-4)^2}$

$\sqrt{16+16}$

$\sqrt{32}$

$2 \cdot 2\sqrt{2}$

$4\sqrt{2}$

32 = 2 · 16 = 2 · 2 · 8 = 2 · 2 · 2 · 4 = 2 · 2 · 2 · 2 · 2

Perimeter

$\sqrt{106} + 4\sqrt{2} + \sqrt{106}$

$\boxed{2\sqrt{106} + 4\sqrt{2}}$

#100

$\sqrt[12]{x^{44}}$

$12 \overline{)44}$ → 3, 36, 8

$x^{3}\sqrt[12]{x^{8}}$ ← GCF = 4

$\boxed{x^{3}\sqrt[3]{x^{2}}}$

$\sqrt[12]{x^{8}}$

Method 1

$x^{8/12}$

$x^{2/3}$

$\sqrt[3]{x^{2}}$

Method 2

$\sqrt[12]{x^{8}}$ ÷4 ÷4 — GCF was 4

$\sqrt[3]{x^{2}}$

#128

$D = \sqrt{L^2 + W^2 + H^2}$

L = 4 ft, W = 2 ft, H = 3 ft

Exact & Rounded

$D = \sqrt{4^2 + 2^2 + 3^2}$

$= \sqrt{16 + 4 + 9}$

$= \boxed{\sqrt{29}\text{ ft}}$ ← Exact

$\boxed{5.4\text{ ft}}$ ← Rounded

Sec 8.4 Adding and Subtracting Radical Expression

Not Allowed $\sqrt{x+y} = \sqrt{x} + \sqrt{y}$

$\sqrt{6} + \sqrt{10} \neq \sqrt{6+10}$

When adding and Subtracting Radicals, Add Like terms

Note: Remember to Simplify <u>all</u> Radicals before determining Like terms

Ex: $5\sqrt{3} + 2\sqrt{3} = (5+2)\sqrt{3} = 7\sqrt{3}$

same Like terms

Ex: $2\sqrt{11} - \sqrt{11} + 5\sqrt{44}$ ← Not simplified!

$2\sqrt{11} - \sqrt{11} + 5 \cdot 2\sqrt{11}$

$2\sqrt{11} - 1\sqrt{11} + 10\sqrt{11}$

$(2 - 1 + 10)\sqrt{11} = 11\sqrt{11}$

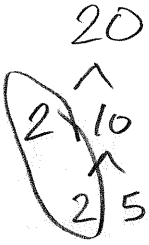
Ex: $2\sqrt{20x} - \sqrt{45x}$

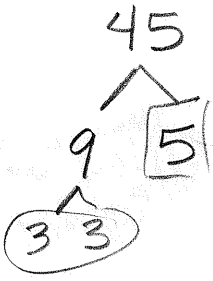
$2 \cdot 2\sqrt{5x} - 3\sqrt{5x}$

$4\sqrt{5x} - 3\sqrt{5x}$

$1\sqrt{5x}$

$\boxed{\sqrt{5x}}$





20

$4 \cdot 5$

$\sqrt{4 \cdot 5}$

$2\sqrt{5}$

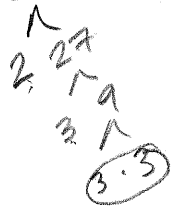
14 $5\sqrt{54} - 2\sqrt{24} - 2\sqrt{96} = 3\sqrt{6}$

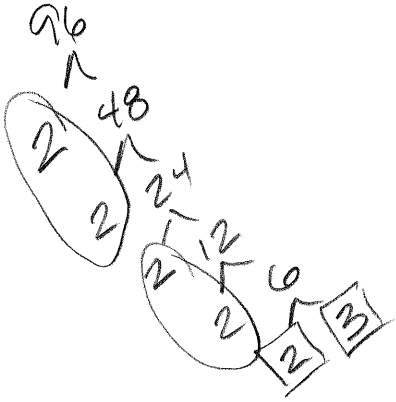
$5 \cdot 3\sqrt{2 \cdot 3} - 2 \cdot 2\sqrt{2 \cdot 3} - 2 \cdot 2 \cdot 2\sqrt{2 \cdot 3}$

$15\sqrt{6} - 4\sqrt{6} - 8\sqrt{6}$

$(15 - 4 - 8)\sqrt{6}$

$3\sqrt{6}$



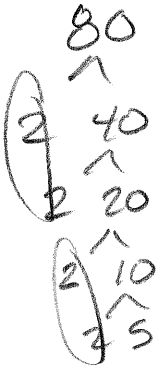


Ex: $\sqrt{12} - \sqrt{80}$

$2\sqrt{3} - 2 \cdot 2\sqrt{5}$

$\boxed{2\sqrt{3} - 4\sqrt{5}}$

Like: $2x^2 - 4x$



Ex: $-2\sqrt[4]{32} - 7\sqrt[4]{162}$

$-2 \cdot 2\sqrt[4]{2} - 7 \cdot 3\sqrt[4]{2}$

$-4\sqrt[4]{2} - 21\sqrt[4]{2}$

$-25\sqrt[4]{2}$