12/7/2012 - Final Review Day 3

Math 1010

73

70

#73 $\dfrac{-4}{m-4} - \dfrac{4}{m+4} = \dfrac{8}{\underset{(m-4)(m+4)}{m^2-16}}$

Eq → Goal LCD to clear fractions to Solve

Exp → Goal LCD (keep denominators) to simplify

LCD: $(m-4)(m+4)$ D: $m \neq 4, -4$

$$(m-4)(m+4)\left(\frac{-4}{m-4} + \frac{-4}{m+4}\right) = \left(\frac{8}{(m-4)(m+4)}\right)^{(m-4)(m+4)}$$

$$\frac{-4(\cancel{m-4})(m+4)}{\cancel{m-4}} + \frac{-4(m-4)(\cancel{m+4})}{(\cancel{m+4})} = \frac{8(\cancel{m-4})(\cancel{m+4})}{(\cancel{m-4})(\cancel{m+4})}$$

$$-4(m+4) + -4(m-4) = 8$$

$$-4m-16 + -4m + 16 = 8$$

$$\frac{-8m}{-8} = \frac{8}{-8}$$

$$\boxed{m = -1} \leftarrow C$$

#70

$$\frac{-33(\sqrt{13}-\sqrt{2})}{(\sqrt{13}+\sqrt{2})(\sqrt{13}-\sqrt{2})}$$

$$\frac{-33(\sqrt{13}-\sqrt{2})}{\sqrt{13}\cdot\sqrt{13}-\sqrt{2}\cdot\sqrt{13}+\sqrt{2}\sqrt{13}-\sqrt{2}\cdot\sqrt{2}}$$

$$13 = \sqrt{26} + \sqrt{26} - 2$$

$$\frac{-33(\sqrt{13}-\sqrt{2})}{11}$$

$$\boxed{-3(\sqrt{13}-\sqrt{2})} \leftarrow C$$

67.

goes 410 mi w/wind
goes 350 mi against wind] same time

Speed of wind is 30mph

Speed of plane = x

$\frac{d}{r} = \frac{r \cdot t}{r}$

$\frac{d}{r} = t$

	Rate	time	distance
w/wind	$x+30$	$\frac{410}{x+30}$	410
against wind	$x-30$	$\frac{350}{x-30}$	350

// equal

$$\frac{410}{(x+30)} = \frac{350}{(x-30)} \Rightarrow 410(x-30) = 350(x+30)$$

$410x - 12300 = 350x + 10500$

$-350x \quad +12300 \quad -350x \quad 12300$

$60x = 22800$ $\quad x = 380$

380 mph

#74 Utility: 44,820 Sales: 432,000

$$\text{Percent} = \frac{\text{part}}{\text{whole}} = \frac{44{,}820}{432{,}000}$$

$$= .1037$$

$$10.37\%$$

$$10.4\% \leftarrow D$$

75 $\frac{2x-5}{5} = \frac{4x+2}{4}$

$$4(2x-5) = 5(4x+2)$$

$$8x-20 = 20x+10$$

$$-20x \qquad -20x$$

$$-12x-20 = 10$$

$$+20 \qquad +20$$

$$\frac{-12x}{-12} = \frac{30}{-12}$$

$$x = 30/-12 = \boxed{-5/2} \leftarrow B$$

ok $\sqrt{gf} = \sqrt{g}\cdot\sqrt{f}$

ok $\sqrt{\frac{g}{f}} = \frac{\sqrt{g}}{\sqrt{F}}$

#68 $c^2 + d^2 + f^2 = g^2$ Solve for c

$$-d^2 \quad -f^2 \qquad -d^2 - f^2$$

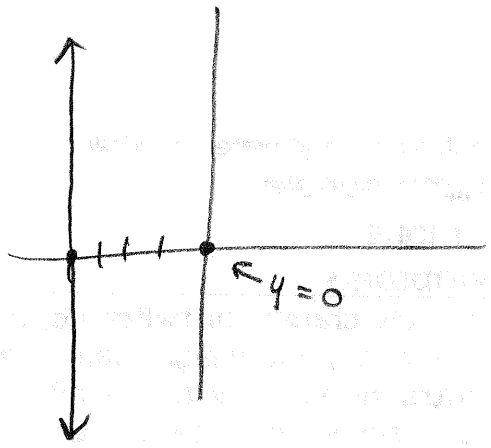
$$\sqrt{c^2} = \sqrt{g^2 - d^2 - f^2}$$

Not ~~ok~~ $\sqrt{g^2} - \sqrt{d^2} - \sqrt{f^2}$ aka Not C

$$c = \pm\sqrt{g^2 - d^2 - f^2} \leftarrow b$$

$x+4=0$
$-4 \quad -4$

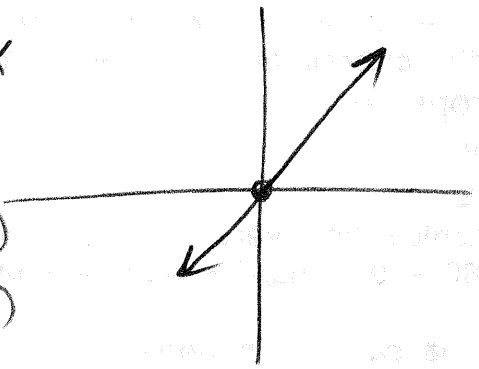
$x=-4$



x-int: $(-4,0)$

y-int: None

Ex: $y=x$



x-int: $(0,0)$

y-int: $(0,0)$

#86

$$y = 2x^2 - 8x + 7$$

Vertex $x = \frac{-b}{2a}$ $\quad \frac{-(-8)}{2(2)} = \frac{8}{4} = 2$

$y = 2(2)^2 - 8(2) + 7$

$= 8 - 16 + 7$

$= -1$

$(2, -1)$

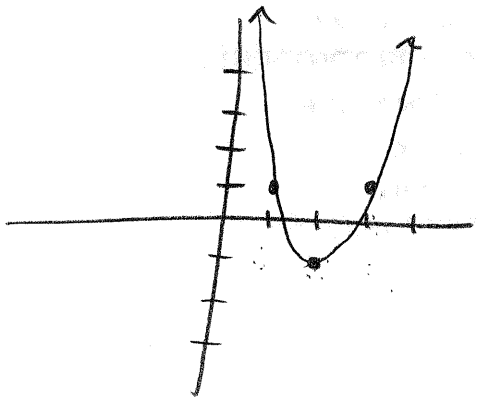
x	y
1	1
3	1

$2 \cdot 1^2 - 8 \cdot 1 + 7$

$2 - 8 + 7 = 1$

$2 \cdot 3^2 - 8 \cdot 3 + 7$

$18 - 24 + 7$



#90

$$\frac{z^2+10z+21}{z^2+12z+35} \div \frac{z^2+3z}{z^2-2z-35}$$

$$\frac{z^2+10z+21}{z^2+12z+35} \cdot \frac{z^2-2z-35}{z^2+3z}$$

Ephraim — Richfield

$$\frac{(z+7)(z+3)}{(z+5)(z+7)} \cdot \frac{(z-7)(z+5)}{z(z+3)}$$

$$\boxed{\frac{z-7}{z}} \leftarrow C$$

#89

10%	+	60%	=	30%
x		40		$x+40$

$$.10x + .60(40) = .30(x+40)$$

$$.10x + 24 = .30x + 12$$

$$-.10x \quad -12 \qquad -.10x \quad -12$$

$$\frac{12}{.20} = \frac{.20x}{.20} \qquad x = 60\ L \leftarrow A$$