Algebra 2 | Tues. 5-7-13 | Class Notes

(44) $\dfrac{3m}{2m} + \dfrac{m-1}{2m-6}$

$\dfrac{6m^2-18m}{2m(2m-6)} + \dfrac{2m^2-2m}{2m(2m-6)}$

$\dfrac{8m^2-20m}{(2m)(2)(m-3)} = \dfrac{4m^2(2m-5)}{2m(2m-6)}$

$= \dfrac{2(2m-5)}{2(m-3)}$

$= \boxed{\dfrac{2m-5}{m-3}}$

(49) $\frac{-7}{-7} = \frac{-7\sqrt{3b-17}}{-7}$

$1 = \sqrt{3b-17}$

$1 = 3b-17$

$\frac{18}{3} = \frac{3b}{3}$

$\boxed{6 = b}$

Ck $-7 \stackrel{?}{=} -7\sqrt{3(6)-17}$

$-7 \stackrel{?}{=} -7\sqrt{1}$ ✓

(51) $6 = \left(\frac{V}{2}\right)^{\frac{1}{2}} - 1$

$7^2 = \left[\left(\frac{V}{2}\right)^{\frac{1}{2}}\right]^{\frac{2}{1}}$

$49 = \frac{V}{2}$

$\boxed{98 = V}$

ck $6 \stackrel{?}{=} \left[\frac{(98)}{2}\right]^{\frac{1}{2}} - 1$

$6 \stackrel{?}{=} [49]^{\frac{1}{2}} - 1$

$6 \stackrel{?}{=} 7 - 1$ ✓

(58) $x^2 - 16y^2 + 96y - 160 = 0$

$(x-0)^2 + -16y^2 + 96y = 160$

$(x-0)^2 + -16(y^2 - 6y + \{3^2\}) = 160 + \{-144\}$

$\frac{(x-0)^2}{16} - \frac{16(y-3)^2}{16} = \frac{16}{16}$

$$\frac{(x-0)^2}{16} - \frac{(y-3)^2}{1} = 1$$

hyperbola

(77) $x^2 + y^2 - 12x - 4y + 23 = 0$

$-x^2 + 8y^2 + 12x - 59y + 31 = 0$

$9y^2 - 63y + 54 = 0$

$9(1y^2 - 7y + 6) = 0$

sum = -7
prod = 6
-1 -6

$9(y-1)(y-6) = 0$ $\therefore y = \{1, 6\}$

$y=1$ $x^2 + 1 - 12x - 4 + 23 = 0$

$x^2 - 12x + 20 = 0$

sum = -12
prod = 20
-2 -10

$(x-2)(x-10) = 0$ $x = \{2, +10\}$

$y=6$ $x^2 + 36 - 12x - 24 + 23 = 0$

$x^2 - 12x + 35$

sum ⇒ -12
prod ⇒ 35
-5 -7

$(x-5)(x-7) = 0$ $\therefore x = \{5, 7\}$

(2, 11) ← Ans
(10, 11) ← Ans

Ans → (5, 6)
(7, 6) ← Ans