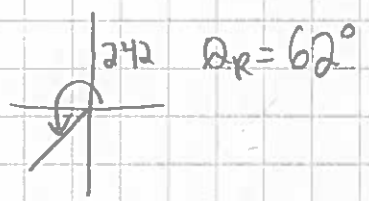


Math Pre-calc Final Review Key

1.



2. $\cos 210^\circ$

S/A
T/C
⊖ Q3

$$210 - 180 = 30^\circ$$

$$-\cos 30^\circ$$

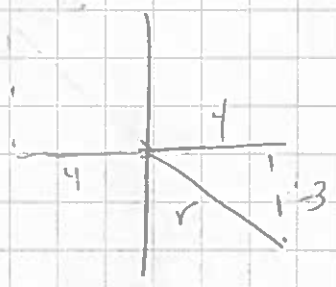
$$-\frac{\sqrt{3}}{2}$$

$\sin 315^\circ$

Q4 ⊖ $\theta = 45^\circ$

$$-\frac{\sqrt{2}}{2}$$

3.



$$x^2 + y^2 = r^2$$

$$(4)^2 + (-3)^2 = r^2$$

$$r = 5$$

$$\sin \theta = \frac{y}{r} = \frac{-3}{5}$$

$$\cos \theta = \frac{x}{r} = \frac{4}{5}$$

$$\tan \theta = \frac{y}{x} = \frac{-3}{4}$$

4. $\sin \theta = \frac{5}{13}$ Q2

$$\sin = \frac{y}{r}$$

$$y = 5$$

$$r = 13$$

$$x = \sqrt{13^2 - 5^2}$$

$$x = 12$$

$$\cos \theta = -\frac{12}{13}$$

$$\tan \theta = \frac{5}{-12}$$

5. $\cos \theta < 0$ $\tan \theta > 0$

S/A
T/C

Q3

6. $\sin \theta = \frac{-\sqrt{3}}{2}$ ⊖ Q3/Q4

$$\theta_R = 60^\circ$$

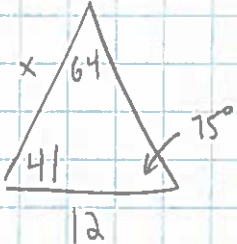
$$Q3 = 240^\circ$$

$$Q4 = 300^\circ$$

7

●

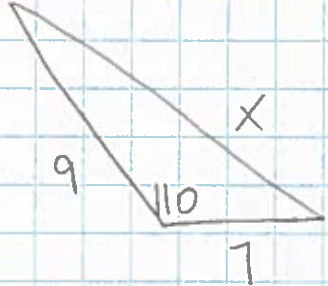
7a)



$$\frac{x}{\sin 75} = \frac{12}{\sin 64}$$

$$x = 12.9$$

b)



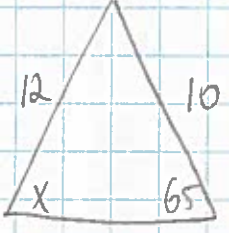
$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$= 7^2 + 9^2 - 2(7)(9) \cos 110$$

$$= 203$$

$$x = 14.3$$

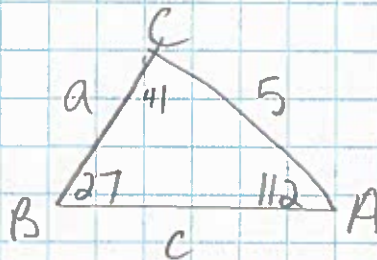
c)



$$\frac{\sin x}{10} = \frac{\sin 65}{12}$$

$$x = 49^\circ$$

8.a) $B = 27^\circ$ $A = 112^\circ$ $b = 5$



$$\begin{aligned} \angle C &= 180 \\ &- 27 \\ &- 112 \end{aligned}$$

$$\frac{c}{\sin 41} = \frac{5}{\sin 27}$$

$$\frac{a}{\sin 112} = \frac{5}{\sin 27}$$

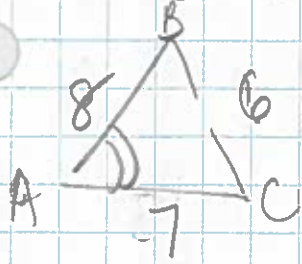
$$\angle C = 41^\circ$$

$$c = 7.2$$

$$a = 10.2$$

$$a = 10.2 \quad c = 7.2 \quad \angle C = 41$$

b) $a = 6$ $b = 7$ $c = 8$



$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

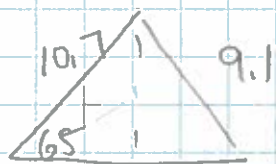
$$= \frac{7^2 + 8^2 - 6^2}{2(7)(8)}$$

$$\angle A = 17^\circ$$

$$\cos B = \frac{8^2 + 6^2 - 7^2}{2(8)(6)}$$

$$\angle B = 58^\circ \quad \angle C = \frac{180 - 58}{2} = 105^\circ$$

9a) $\angle A = 65$ $a = 9.1$ $b = 10.7$
~~→ solve height~~

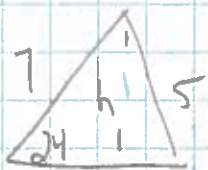


$$\sin 65 = \frac{h}{10.7}$$

$$h = 9.69$$

the height is bigger than a so
 no triangles formed

b) $\angle A = 24$ $a = 5$ $b = 7$



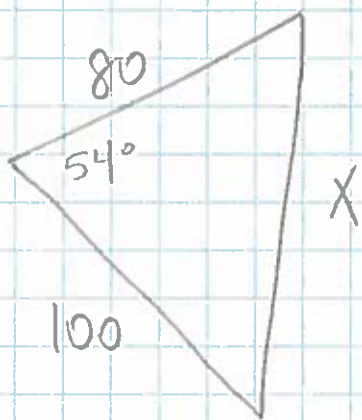
$$\sin 24 = \frac{h}{7}$$

$$\text{height} = 2.84$$

$$2.84 < 5 < 7 \text{ so}$$

2 triangles can be formed

10.



$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$= 80^2 + 100^2 - 2(80)(100) \cos 54$$

$$= 6995.4$$

$$X = 83.6$$

They are 83.6 km apart.

Quadratic Functions

1.) a) $y = 3x^2$
vertex (0,0)

b) $y + 3 = -\frac{1}{2}x^2 - 3$
 $-3 = -\frac{1}{2}x^2 - 3$
vertex (0, -3)

c) $y = (x+1)^2 + 2$
vertex (-1, 2)

2a) $y = x^2 + 4x + 0$

b) $y = x^2 + x - 1$

$\frac{4}{2}$
 $y = (x^2 + 4x + 4 - 4) + 0$
 $= 2$
 $y = (x^2 + 4x + 4) - 4$
 $x^2 = 4$
 $y = (x+2)^2 - 4$

$(\frac{1}{2})$
 $y = (x^2 + x + \frac{1}{4} - \frac{1}{4}) - 1$
 $\frac{1}{4}$
 $= (x^2 + x + \frac{1}{4}) - \frac{1}{4} - 1$
 $y = (x + \frac{1}{2})^2 - \frac{5}{4}$

c) $y = \frac{-3x^2 + 12x - 2}{-3}$

$y = -3(x^2 - 4x) - 2$

$\frac{4}{2}$
 $y = -3(x^2 - 4x + 4 - 4) - 2$

$= 2$
 $y = -3(x^2 - 4x + 4) + 12 - 2$

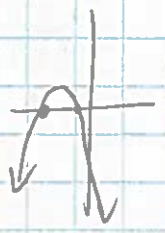
$x^2 = 4$
 $y = -3(x-2)^2 + 10$

3. $y = -3(x+2)^2 + 3$

a) vertex (-2, 3)

b) axis of symm $x = -2$

c) concavity down
d) max/min $\max = 3$
e) domain/range $x \in \mathbb{R}, y \leq 3$
f) x & y int
 $x_{int} = -1, -3$
 $y_{int} = -9$



$y = x^2 + 4x + 3$

(-2, -1)

$x = -2$

up \cup
d) min = -1
e) domain/range $x \in \mathbb{R}, y \geq -1$
f) x & y int
 $x_{int} = -1, -3$
 $y_{int} = 3$



4. a) $a=2$ vertex $(-1, 2)$

$$y = 2(x+1)^2 + 2$$

b) vertex $(3, 2)$ point $(2, -1)$

$$y = a(x-p)^2 + q$$

$$-1 = a(2-3)^2 + 2$$

$$-3 = a(1)^2$$

$$-3 = a$$

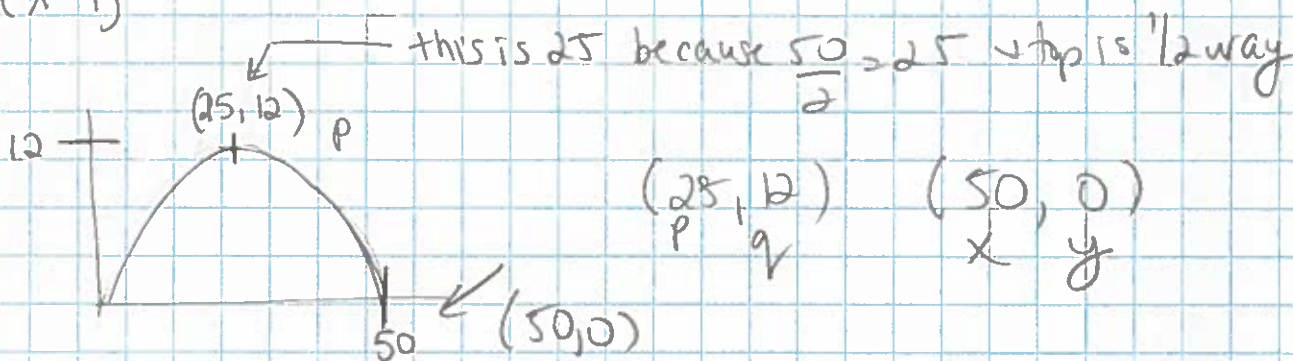
$$y = -3(x-3)^2 + 2$$

5a) $y = (x+2)^2 + 1$

b) $y = -x^2 - 3$

c) $y = -2(x-1)^2$

6



$$y = a(x-p)^2 + q$$

$$0 = a(50-25)^2 + 12$$

$$-12 = a(625)$$

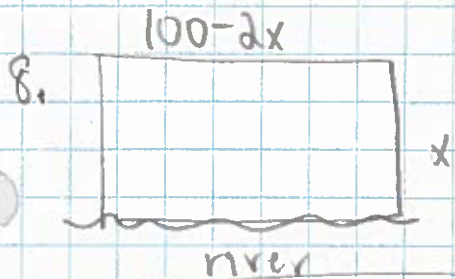
$$a = \frac{-12}{625}$$

$$y = -12/625(x-25)^2 + 12$$

7) $h(t) = -4.9t^2 + 61.25t$

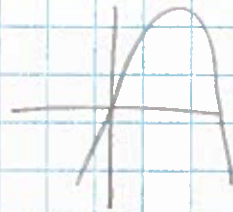
max $(6.25, 191.4)$

max height = 191.4m high, took 6.25 to reach.



$$A = l \cdot w = x(100 - 2x)$$

graph



max area = 1250 m^2

$$x = 25$$

Quadratic Equations

1a) $3x^2 - 36x$

$3x(x-12)$

$x = 0, 12$

b) $2x^2 - 7x - 15$

$\frac{2x^2 - 10x + 3x - 15}{2x \quad 3}$

$(2x+3)(x-5)$

$x = -3/2, 5$

$\begin{array}{r} x \\ -30 \quad -7 \\ \hline -10, 3 \end{array}$

c) $6x^2 - 11x + 3 = 24$
 $\quad \quad -24 \quad -24$

$6x^2 - 11x - 21 = 0$ $\begin{array}{r} x \\ -126 \quad -11 \\ \hline -18, 7 \end{array}$

$\frac{6x^2 - 18x + 7x - 21}{6x \quad 7}$

$(6x+7)(x-3)$

$x = -7/6, 3$

#2 (don't complete square \rightarrow bad idea factor or quadratic formula)

a) $x^2 - 6x + 5 = 0$

$(x-5)(x-1)$

$x = 5, 1$

b) $x^2 + 4x + 1 = 0$

$\frac{-4 \pm \sqrt{4^2 - 4(1)(1)}}{2(1)}$

$\frac{-4 \pm \sqrt{12}}{2}$ $\frac{\sqrt{12}}{\sqrt{9}\sqrt{3}}$

$\frac{-4 \pm 2\sqrt{3}}{2}$

$x = -2 \pm \sqrt{3}$

c) $3x^2 - x - 2 = 0$

$\begin{array}{r} x \\ -6 \quad -1 \\ \hline -3, 2 \end{array}$

$\frac{3x^2 - 3x + 2x - 2}{3x \quad 2}$

$(3x+2)(x-1)$

$x = -2/3, 1$

$$3a) x^2 + 4x - 96 = 0$$

$$= \frac{-4 \pm \sqrt{4^2 - 4(1)(-96)}}{2(1)}$$

$$= \frac{-4 \pm \sqrt{400}}{2}$$

$$\frac{-4 \pm 20}{2} \quad \textcircled{1} \quad \frac{-4 + 20}{2} = 8$$

$$\textcircled{2} \quad \frac{-4 - 20}{2} = -12$$

$$x = 8, -12$$

$$b) \frac{3x^2}{3} = \frac{4}{3}$$

$$x^2 = \frac{4}{3} \quad x = \pm \sqrt{\frac{4}{3}}$$

$$x = \pm \frac{\sqrt{4}}{\sqrt{3}} = \frac{\pm 2}{\sqrt{3}} = \boxed{\frac{\pm 2\sqrt{3}}{3}}$$

$$4) x^2 - 10x + 16 \quad \text{zeros} = x - \text{int}$$

$$(x-8)(x-2)$$

$$\boxed{\text{zeros} = 2, 8}$$

$$5. \quad \frac{1}{2} \rightarrow (2x-1) \quad -\frac{2}{3} \rightarrow (3x+2)$$

$$(2x-1)(3x+2)$$

$$= 6x^2 + 1x - 2$$

$$6 \quad \text{discriminant} = b^2 - 4ac$$

$$a) x^2 - 4x - 5$$
$$(-4)^2 - 4(1)(-5)$$

$$36$$

2 distinct roots

$$b) x^2 = -9$$
$$x^2 + 9 = 0$$

$$0^2 - 4(1)(9)$$

$$-36$$

non real roots

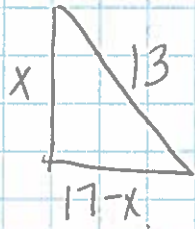
$$c) x^2 + 2x + 1$$

$$2^2 - 4(1)(1)$$

$$= 0$$

2 equal roots

7a



$$x^2 + (17-x)^2 = 13^2$$

$$x^2 + 289 - 34x + x^2 = 169$$

$$2x^2 - 34x + 120 = 0$$

$$2(x^2 - 17x + 60)$$

$$2(x-12)(x-5)$$

$$x = 12, 5$$

side lengths are 5 & 12.

$$8. h(t) = 5t^2 - 30t + 45$$

$$20 = 5t^2 - 30t + 45$$

$$\begin{array}{r} -20 \\ -20 \end{array} = 5t^2 - 30t + 25$$

$$5(t^2 - 6t + 5)$$

$$5(t-5)(t-1)$$

$$t = 1, 5$$

Radicals.

#1 a) $\sqrt{150}$
 $\sqrt{25}\sqrt{6}$
 $5\sqrt{6}$

b) $\sqrt[3]{32x^5}$
 $\sqrt[3]{32} \sqrt[3]{x^3 \cdot x^2}$
 $\sqrt[3]{8}\sqrt[3]{4}$
 $2\sqrt[3]{4} \quad x\sqrt[3]{x^2}$
 $2x\sqrt[3]{4x^2}$

c) $\sqrt[4]{32x^9y^6}$
 $\sqrt[4]{32} \sqrt[4]{x^8} \sqrt[4]{y^6}$
 $\sqrt[4]{16 \cdot 2} \cdot \sqrt[4]{x^8} \sqrt[4]{y^4 \cdot y^2}$
 $2\sqrt{2} \quad x^2\sqrt{x} \quad y\sqrt{y^2}$
 $2x^2y\sqrt{2xy^2}$

2a) $4\sqrt{3}$
 $\frac{\sqrt{4^2 \cdot 3}}{\sqrt{48}}$

b) $2x\sqrt[3]{3x^2}$
 $\sqrt[3]{(2x)^3 \cdot 3x^2}$
 $\sqrt[3]{24x^5}$

3a) $5\sqrt{2} - 6\sqrt{3} + 7\sqrt{2} - \sqrt{3}$
 $12\sqrt{2} - 7\sqrt{3}$

b) $\sqrt{108} - 2\sqrt{27} - \sqrt{40} - 5\sqrt{160}$
 $\sqrt{36}\sqrt{3} - 2\sqrt{9}\sqrt{3} - \sqrt{4}\sqrt{10} - 5\sqrt{16}\sqrt{10}$
 $6\sqrt{3} - 6\sqrt{3} - 2\sqrt{10} - 20\sqrt{10}$
 $-22\sqrt{10}$

c) $3\sqrt[3]{54} + 2\sqrt[3]{128}$
 $\sqrt[3]{27}\sqrt[3]{2} \quad \sqrt[3]{64}\sqrt[3]{2}$
 $4\sqrt[3]{2}$
 $9\sqrt[3]{2} + 8\sqrt[3]{2}$
 $17\sqrt[3]{2}$

$$4a) \sqrt{6}(\sqrt{2})$$

$$\frac{\sqrt{12}}{\sqrt{4}\sqrt{3}} = 2\sqrt{3}$$

$$b) (3\sqrt{2x})(3\sqrt{2x})$$

$$= 9(2x) = 18x$$

$$c) (\sqrt[3]{4x^2})(\sqrt[3]{4x^2})$$

$$= \sqrt[3]{16x^4}$$

$$= \sqrt[3]{16} \cdot \sqrt[3]{x^4}$$
$$\sqrt[3]{8\sqrt{2}} \quad \sqrt[3]{x^3 \cdot x}$$

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

$$d) (2x\sqrt{3y})(3x\sqrt{6y^3})$$

$$6x^2 \sqrt{18y^4}$$
$$\sqrt{9}\sqrt{2}$$

$$\boxed{18x^2y^2\sqrt{2}}$$

$$e) 3\sqrt{2}(\sqrt{2} + \sqrt{3})$$

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

$$\boxed{= 6 + 3\sqrt{6}}$$

$$f) (3\sqrt{2} - 2\sqrt{5})(3\sqrt{2} - 2\sqrt{5})$$

$$9(2) - 6\sqrt{10} - 6\sqrt{10} + 4(5)$$

$$\boxed{38 - 12\sqrt{10}}$$

$$5a) \frac{3\sqrt{6}}{6\sqrt{2}}$$

$$\frac{1}{2}\sqrt{3} \text{ or } \frac{\sqrt{3}}{2}$$

$$b) \frac{\sqrt{2}}{\sqrt{10}} = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}$$

$$c) \frac{3\sqrt{2}}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$= \frac{3\sqrt{6}}{2(3)}$$

$$= \frac{3\sqrt{6}}{6} = \frac{\sqrt{6}}{2}$$

$$d) \frac{3x}{\sqrt{2x}} \cdot \frac{\sqrt{2x}}{\sqrt{2x}} = \frac{3x\sqrt{2x}}{2x}$$

$$= \frac{3\sqrt{2x}}{2}$$

$$e) \frac{(3\sqrt{3} - \sqrt{2})\sqrt{2}}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$= \frac{3\sqrt{6} - 2}{4}$$

$$f) \frac{(\sqrt{5} + \sqrt{3})(\sqrt{5} + \sqrt{3})}{(\sqrt{5} - \sqrt{3})(\sqrt{5} + \sqrt{3})}$$

$$= \frac{5 + \sqrt{15} + \sqrt{15} + 9}{5 - 3} = \frac{14 + 2\sqrt{15}}{2}$$

$$= 7 + \sqrt{15}$$

~~$$g) \frac{2}{\sqrt{9}} \cdot \frac{\sqrt{9}}{\sqrt{9}}$$~~

$$\#6a) \sqrt{3x-2}^2 = 7^2$$

$$3x-2=49$$

$$3x=51$$

$$\boxed{x=17}$$

verify $\sqrt{17(3)-2}$
 $\sqrt{49}=7$ ✓

$$b) 6 - 2\sqrt{x+2} = -2$$

$$\begin{array}{r} -6 \\ -6 \end{array} \quad \begin{array}{r} -2 \\ -6 \end{array}$$
$$\frac{-2\sqrt{x+2}}{-2} = \frac{-8}{-2}$$

$$\sqrt{x+2}^2 = 4^2$$

$$x+2=16$$

$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$\boxed{x=14}$$

verify
 $6 - 2\sqrt{14+2} = -2$
✓ ✓

$$c) \sqrt{2x+5}^2 = (x-5)^2$$

$$\begin{array}{r} 2x+5 \\ -2x \quad -5 \end{array} = \begin{array}{r} x^2-10x+25 \\ -x^2 \quad +5 \end{array}$$

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

$$(x-10)(x-2)$$

$$x=10, 2$$

✓ X

$$\boxed{x=10}$$

$$d) \sqrt{x^2+4}^2 = 3^2$$

$$x^2+4=9$$

$$x^2=5$$

$$x = \pm\sqrt{5}$$

$$e) \sqrt{y-5} + \sqrt{y} = 5$$

$$\sqrt{y-5}^2 = (5 - \sqrt{y})^2$$

$$\begin{array}{r} y-5 \\ -y \quad -25 \end{array} = \begin{array}{r} 25 - 10\sqrt{y} + y \\ -25 \end{array}$$

$$\begin{array}{r} -30 \\ -10 \end{array} = \begin{array}{r} -10\sqrt{y} \\ -10 \end{array}$$

$$3 = \sqrt{y}$$

$$\boxed{9 = y}$$

Rationals

1 a) $\frac{12x^2y^2}{15xy^3}$

$$= \frac{4x}{5y} \quad x \neq 0, y \neq 0$$

b) $\frac{16x^2-25}{12x+5}$

$$= \frac{(4x-5)(4x+5)}{3(4x+5)} = \frac{4x-5}{3}, \quad x \neq -5/4$$

c) $\frac{3x-6}{2x^2+x-10}$

$$= \frac{3(x-2)}{(x-2)(2x+5)}$$

$$= \frac{3}{2x+5}, \quad x \neq 2, -5/2$$

$\frac{2x^2+x-10}{2x^2+5x-4x-10}$
 $\frac{\quad}{x \quad -2}$

2 a) $\frac{12m^3f \cdot 3c}{5cf \cdot 4m}$

$$= 9m$$

$c, f, m \neq 0$

b) $\frac{a^2-16}{16a-4a^2} \cdot \frac{2a^3+6a^2}{a^2+7a+12}$

$$= \frac{(a-4)(a+4)}{-4a(4+a)} \cdot \frac{2a^2(a+3)}{(a+3)(a+4)}$$

$$= \frac{-1a}{2}$$

$a \neq 0, -4, -3$

c) $\frac{8y^2-2y-3}{y^2-1} \div \left[\frac{2y^2-3y-2}{2y-2} \div \frac{3-4y}{y+1} \right]$

$$\frac{8y^2-2y-3}{y^2-1} = \frac{(2y+1)(4y-3)}{(y-1)(y+1)}$$

$$= \frac{(2y+1)(4y-3)}{(y-1)(y+1)} \cdot \frac{2(y-1)}{(2y+1)(y-2)} \cdot \frac{y+1}{-(-3+4y)}$$

$$\frac{2y^2-3y-2}{2y+1} = \frac{(y-2)(2y+1)}{2y+1}$$

$$= \frac{-2}{(y-2)}, \quad y \neq \pm 1, -\frac{1}{2}, \frac{3}{4}, 2$$

$$y \neq \pm 1, -\frac{1}{2}, 2, \frac{3}{4}$$

$$3a) \frac{3}{m} + \frac{2}{n} - \frac{3}{c}$$

$$\frac{3nc + 2mc - 3mn}{mnc}, m, n, c \neq 0$$

$$b) \frac{3(a-5)}{2} - \frac{2(a-2)}{3} = \frac{3a-15-2a+4}{6} = \frac{a-11}{6}$$

$$c) \frac{y^2-20}{y^2-4} - \frac{(y-2)(y-2)}{y+2}$$

$$\frac{y^2-20 - (y^2-4y+4)}{(y-2)(y+2)} = \frac{4y-24}{(y-2)(y+2)}, y \neq \pm 2$$

$$d) \frac{5}{x^2-5x+6} - \frac{4}{x^2-x-6} = \frac{5(x+2)}{(x-3)(x-2)} - \frac{4(x-2)}{(x-3)(x+2)}$$

$$\frac{5x+10-4x+8}{(x-3)(x-2)(x+2)} = \frac{x+18}{(x-3)(x-2)(x+2)}, x \neq 3, \pm 2$$

$$e) \frac{1 + \frac{1}{x}}{x - \frac{1}{x}} = \frac{x + \frac{1}{x} \div x - \frac{1}{x}}{x - \frac{1}{x} \div x} \rightarrow \frac{\cancel{x+1} \cdot \cancel{x}}{\cancel{x} \cdot \cancel{x^2-1}}$$

$$= \frac{x+1}{(x-1)(x+1)}$$

$$= \frac{1}{x-1}, x \neq 0, \pm 1$$

$$4a) \left(\frac{x-2}{2} = \frac{2x+4}{5} - 1 \right)^{10}$$

$$5(x-2) = 2(2x+4) - 1(10)$$

$$5x - 10 = 4x + 8 - 10$$

$$\boxed{x = 8}$$

$$b) \left(\frac{12}{x} - 1 = \frac{9}{x} \right)^x = 12 - x = 9$$
$$3 = x$$

$$\boxed{x = 3, x \neq 0}$$

$$c) \frac{x(x-4)}{x-2} = \frac{(x-6)(x-2)}{x-4}$$

$$x^2 - 4x = \cancel{x^2} - 8x + 12$$
$$-x^2 + 4x \quad \cancel{-x^2 + 4x}$$

$$= -4x + 12$$

$$4x = 12$$

$$\boxed{x = 3}$$

$$d) \frac{d}{d+4} = \frac{2-d}{d^2+3d-4} + \frac{1}{d-1}$$

$$\frac{d^{(d-1)}}{d+4} = \frac{2-d}{(d+4)(d-1)} + \frac{1}{d-1} \cdot \frac{(d+4)}{(d+4)}$$

$$d^2 - 1d = 2 - d + d + 4$$

$$d^2 - 1d - 6$$

$$(d-3)(d+2)$$

$$d = 3, -2, \quad d \neq -4, 1$$

$$5. \quad \begin{array}{l} x+y=12 \\ \frac{1}{x} + \frac{1}{12-x} = \frac{4x(12-x)}{9} \end{array}$$

~~$$12-x+x = 48x - 4x^2$$~~

~~$$4x^2 - 48x + 12$$~~

~~$$4(x^2 - 12x + 3)$$~~

$$\begin{array}{r} 27 \\ 4 \overline{) 108} \\ \underline{8} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

$$x \quad 12-x$$

$$\frac{1}{x} + \frac{1}{12-x} = \frac{4(x)(12-x)}{9}$$

$$108 - 9x + 9x = 48x - 4x^2$$

$$4x^2 - 48x + 108 = 0$$

$$4(x^2 - 12x + 27)$$

$$4(x-9)(x-3)$$

$$x = 9, 3$$


Absolute Value & Reciprocal Functions

a) $|1-3| = 3$ b) $\frac{-2|-6|}{-2(6)} = -12$ c) $\frac{3|-2+4|-2|}{= 48}$

d) $\frac{|2-6-3|}{|-7|} - \frac{|5-4+3(2)|}{|-7|}$
 $1 - 1$
 $= 0$

a) $|3x| = 9$
 $-3x = 9$ $3x = 9$
 $x = -3$ $x = 3$

b) $5|4x| + 10 = 5$
 $\frac{-5(4x)}{-5} = \frac{-5}{-5}$ $\frac{5(4x)}{5} = \frac{-5}{5}$
 $4x = 1$ $4x = -1$
 $x = 1/4$ $x = -1/4$

d) $|3x+3| = 2x-5$ 
 $-(3x+3) = 2x-5$ $3x+3 = 2x-5$
 $-3x-3 = 2x-5$ $x = -8$
 $2 = 5x$
 $2/5 = x$

c) $|4x+3| = 7$
 $-(4x+3) = 7$ $4x+3 = 7$
 $4x+3 = -7$ $4x = 4$
 $4x = -10$ $x = 1$
 $x = -5/2$

$$e) |x^2 - 2x + 2| = 3x - 4$$

$$-(x^2 - 2x + 2) = 3x - 4$$

$$-x^2 + 2x - 2 = 3x - 4$$

$$= x^2 + x - 2$$

$$(x+2)(x-1)$$

$$x = -2, 1$$

$$x^2 - 2x + 2 = 3x - 4$$

$$-3x + 4$$

$$x^2 - 5x + 6$$

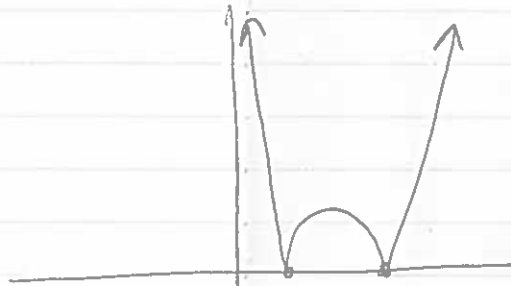
$$(x-3)(x-2)$$

$$x = 3, 2$$

3a)



b)



$$4 a) y = |x - 3|$$



$$b) y = |-x^2 + 4|$$

