Unit Review

1. Simplify by grouping like terms:

a) $6x^2 - 4x + 3x + 2x^2 = 8x^2 - x$

b) $-10m - 4m^2 - m + 5m^2 = m^2 - 11m$

2. Add the polynomials:

a) $(12x^2 - 6x) + (4x - 6x^2) = 6x^2 - 2x$

b) $(-8n + 3n^2) + (7n^2 - 2n) = 10n^2 - 10n$

3. What is the opposite:

$$6x^2 - 4x + 2 = -6x^2 + 4x - 2$$

4. Simplify by "adding the opposite:" ← only change what is behind subtraction!

a) $(4x + 12) \boxed{- (8x - 7)}$

$(4x + 12) + (-8x + 7) = -4x + 19$

b) $(-13y^2 - 11y) + (-2y^2 + 4y) = -15y^2 - 7y$

5. Simplify:

Subtract, so add the opposite!

a) $(4 + 3x) + (6x + 8) + (-2x + 4) = 7x + 16$

b) $(10x + 4y) + (-3x - y) + (-8x + 2y) = -x + y$

6. Find the Perimeter. Then Solve.

a)

x [2x+4] x $6x + 8$

2x + 4

$x = 11.4$ cm

$6(11.4) + 8$

$\boxed{76.4 \text{ cm}}$

b)

$3y$ [ ]

10y - 4

$2(3y) + 2(10y - 4)$
$6y + 20y - 8$
$26y - 8$

$y = 6$ m

$26(6) - 8$
$156 - 8$
$\boxed{148 \text{ m}}$

7. Find the Product by using "distribution:" (by multiplying!) multiplies to all parts!

a) $5(3x) = 15x$ c) $(\frac{1}{2}x)(8x) = \underline{8}x^2 = 4x^2$

a) $5(3x) = 15x$

c) $\left(\frac{1}{2}x\right)(8x) = \frac{8}{2}x^2 = 4x^2$

b) $= -48x^2$

e) $3(4x+5) = 12x + 15$

d) $\left(\frac{3}{4}x\right)\left(\frac{8x}{1} - \frac{4}{1}\right)$

$\frac{24}{4}x^2 - \frac{12}{4}x = 6x^2 - 3x$

8. Simplify:

a) $\dfrac{15m^2 + 25m}{5m} = \dfrac{15m^2}{5m} + \dfrac{25m}{5m} = 3m + 5$

9. Find the missing dimension:

a) $A = 36m^2$?   9m

b) $A: 12x^2 + 3x$? $(3x)$ $(4x+1)$

$A = LW \rightarrow W = \dfrac{A}{L} = \dfrac{36m^2}{9m}$

$(4m)$

10. Solve:

a) $\dfrac{4x}{4} = \dfrac{88}{4}$
   $x = 22$

b) $3x + 7 = -29$
   $\quad -7 \quad\quad -7$
   $\dfrac{3x}{3} = \dfrac{-36}{3} \quad x = -12$

c) $-4(x + 11) = -32$
   $\div -4 \quad\quad\quad \div -4$
   $x + 11 = 8$
   $\quad -11 \quad -11$
   $x = -3$

d) $1.5w - 4.3 = 4.7$
   $\quad\quad +4.3 \quad +4.3$
   $1.5w = 9$
   $\div 1.5 \quad \div 1.5$
   $w = 6$

e) $\dfrac{3}{5}x = 4\frac{1}{2}$
   $\dfrac{\frac{3}{5}}{\frac{3}{5}}x = \dfrac{9}{2} \div \dfrac{3}{5}$
   $\dfrac{9}{2} \times \dfrac{5}{3} = \dfrac{45}{6} \quad \dfrac{3}{6}$

f) $\dfrac{3}{4}x - 1\frac{2}{5} = 2\frac{3}{10}$
   $\dfrac{3}{4}x - \dfrac{7}{5} = \dfrac{23}{10} + \dfrac{14}{10}$
   $\dfrac{3}{4}x = \dfrac{37}{10} \times \dfrac{4}{3}$

$$\frac{4}{2} \times \frac{5}{3} = \frac{45}{6} \quad \frac{5}{6}$$

$$x = 7\frac{1}{2}$$

$$\frac{3}{4}x = \frac{37}{10} \times \frac{4}{3}$$

$$x = \frac{148}{30}^{-120} \quad \frac{28 \div 2}{30 \div 2}$$

$$x = 4\frac{14}{15}$$

g) $0.26 = 3x + 0.05$

$ -0.05 -0.05$

$0.21 = 3x$

$\div 3 \div 3$

$0.07 = x$

h) $2x + \frac{4}{8} = \frac{3}{5} - \frac{1}{10}$

$$\frac{6}{10} - \frac{1}{10}$$

$$2x = \frac{5}{10} \div 2$$

$$x = \frac{5}{20} = \frac{1}{4}$$

i) $\dfrac{k}{3} - \dfrac{1}{2} = -1\dfrac{3}{4}$

$$\frac{-7}{4} + \frac{2}{4}$$

$$\frac{1}{3}k = -\frac{5}{4} \div \frac{1}{3} \times \frac{3}{1}$$

$$k = \frac{-15}{4} = -3\frac{3}{4}$$

j) $\dfrac{3}{4} = 2m + \dfrac{1}{2} - \dfrac{1}{2}$

$$\frac{3}{4} - \frac{2}{4} = 2m$$

$$\frac{1}{4} = 2m$$

$$\boxed{\frac{1}{8} = m}$$

for more like this go to pg 311 # 7-12 ☆

Solve:

a) $0.5x = 1.6 + 0.25x$

$-0.25x -0.25x$

$0.25x = 1.6$

$\div 0.25 \div 0.25$

$x = 6.4$

b) $7.52 + 3.2y = -6.2y$

$ -3.2y -3.2y$

$7.52 = -9.4y$

$\div -9.4 \div 9.4$

$-0.8 = y$

c) $\dfrac{x+1}{2} = \dfrac{x-1}{3}$

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

$$\frac{1}{2}x + \frac{1}{2} = \frac{1}{3}x - \frac{1}{3}$$

$$-\frac{1}{3}x \qquad -\frac{1}{3}x$$

$$\frac{3x}{6} - \frac{2x}{6}$$

$$\frac{1}{6}x + \frac{1}{2} = -\frac{1}{3} - \frac{1}{2}$$

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

$$\frac{1}{6}x = \frac{-5}{6} \times \frac{6}{1}$$

$$x = -5$$

complete a TOV for

a) $y = 2x - 3$

x	y
0	-3
1	-1
2	1
3	2

b) $y = -x + 4$

x	y
0	4
1	3
2	2
3	1

c) $y = \frac{1}{2}x + 5$ Rise / Run

x	y
-2	4
0	5
2	6
4	7

Run 2

What is the equation for:

a)

x	y
0	3
1	6
2	9
3	12
4	15

5 - 3
$y = \frac{3}{1}x + 3$

Run 1   Rise 3

b)

x	y
0	0
1	-1
2	-2
3	-3
4	-4

-1   +1

$y = -x$

c)

x	y
0	450
100	1050
200	1650
300	2250

+100   +600

$y = \frac{6}{1}x + 450$

Run   Rise
    1   3

y int = 3

$$y = -x$$

$$y = \frac{6}{1}x + 450$$