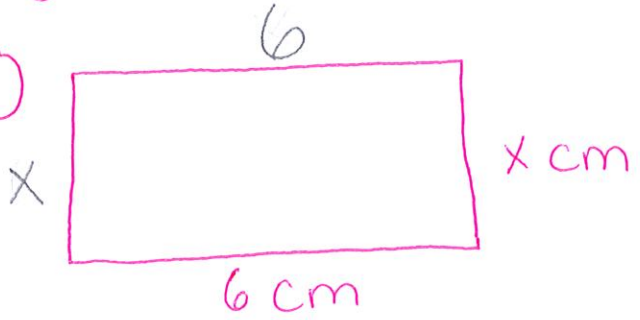
Pg. 17 (Practice A)

① 

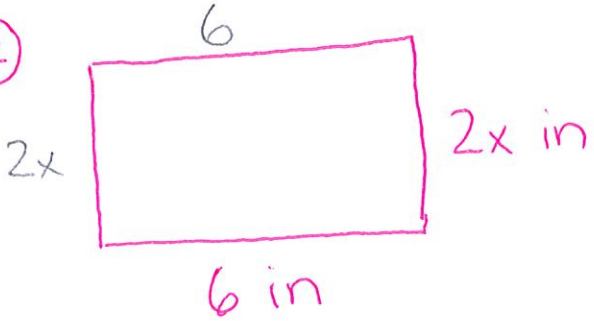
Area = $6x$

Perimeter

$$6+6+x+x=6x$$

$$12+2x=6x$$
$$-2x \quad -2x$$
$$\frac{12}{4}=\frac{4x}{4}$$

$x=3$

② 

Area $= 6 \cdot 2x = 12x$

Perimeter $= 6+6+2x+2x$

$$6+6+2x+2x=12x$$

$$12+4x=12x$$
$$-4x \quad -4x$$
$$\frac{12}{8}=\frac{8x}{8}$$

$x=\frac{12}{8}$ or $1\frac{4}{8}$ or 1.5

③ $y-12=4y$
$-y \quad -y$ (bring y to 4y)

$$\frac{-12}{3}=\frac{3y}{3}$$

$y=-4$

④ $6n-12=n+3$
$-n+12 \quad -n+12$

$$\frac{5n}{5}=\frac{15}{5}$$

$n=3$

⑤ $\frac{1}{5}q=q-\frac{2}{5}q$
$+\frac{2}{5}q \quad +\frac{2}{5}q$ (put q's together)

$$\frac{\frac{3}{5}q}{\frac{3}{5}}=\frac{q}{\frac{3}{5}}$$

$$q=\frac{9}{1}\div\frac{3}{5}$$

$$\frac{9}{1}\times\frac{5}{3}=\frac{45}{3}$$

$q=15$

⑥ $4.3d + 7.5 = 5.8d$

$-4.3d \qquad -4.3d$

$\frac{7.5}{1.5} = \frac{1.5d}{1.5}$

$d = 5$

⑦ $6(h+4) = -2h$ (distributive property)

$6h + 24 = -2h$

$-6h \qquad -6h$

$\frac{24}{-8} = \frac{-8h}{-8}$

$h = -3$

⑧ $3(b-4) = 5b - 2$ (distributive property)

$3b - 12 = 5b - 2$

$-3b + 2 \qquad -3b + 2$

$\frac{-10}{2} = \frac{2b}{2}$

$b = -5$

⑨ $\underbrace{15 + .25x}_{A} = \underbrace{20 + .5x}_{B}$ [set them equal to one another to find out when the # of minutes (x) will make both plans the same price]

$15 + .25x = 20 + .5x$

$-15 \qquad -.25x \qquad -15 \qquad -.5x$

$.25x = 5$

⑩ One third of a number x is equal to 22 less than the number. Write and solve an equation to find the number.

$\frac{1}{3}x = x - 22$

$\frac{1}{3}x = x - 22$

$-x \qquad -x$

$-\frac{3}{3}x \left(-1x \text{ (change to } -\frac{3}{3}x\right)$

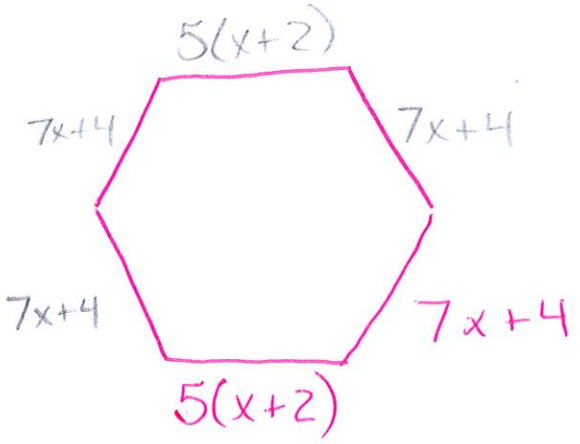
$\frac{-\frac{2}{3}x}{-\frac{2}{3}} = \frac{-22}{-\frac{2}{3}}$

$\frac{-22}{1} \div -\frac{2}{3}$

$\frac{-22}{1} \times -\frac{3}{2} = \frac{-66}{2}$

$x = -33$

11



Perimeter = all sides added together

$5(x+2) + 5(x+2) + 7x+4 + 7x+4 + 7x+4 + 7x+4$

$5x + 10 + 5x + 10 + 28x + 16$

$38x + 36$

(12) 60% of the original price p.

$.60p = p - 32$

write % as a decimal

32 less than original price

$.60p = p - 32$

$-p \quad -p$

$-.40p = -32$

$\frac{-.40p}{-.40} = \frac{-32}{-.40}$

$p = \$80$

(13) $8x + 3 = 8x$

$-8x \quad -8x$

$3 = 0x$

No solution

Impossible, a solution doesn't exist

(14) $-25(10 - x) = 25x + 250$

$-250 + 25x = 25x + 250$

$+250 \quad +250$

$25x = 25x + 500$

$-25x \quad -25x$

$0x = 500$

No solution

*we will review 13-16 in class

(15) $x + 1 = x + 1$

Both sides are equal, so ANY solution (Infinite Solutions)

(16) $6(2x + 4) = 4(3x + 6)$

$12x + 24 = 12x + 24$

(17) $x + 2 = 5x$

$-x \quad -x$

$\frac{2}{4} = \frac{4x}{4}$

$x = \frac{2}{4}$ or $\frac{1}{2}$

(18) $5x + 2 - x = -4x$

$4x + 2 = -4x$

$-4x \quad -4x$

$\frac{2}{-8} = \frac{-8x}{-8}$

$x = -\frac{1}{4}$

Pg. 14

① $8 - 3x = 17$

$-8 \quad -8$

$-3x = 9$

$\frac{-3x}{-3} = \frac{9}{-3}$

$x = -3$

② $5a - 6 - 2a = 12$

$3a - 6 = 12$

$+6 \quad +6$

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

$a = 6$

③ $4.3t - 2.1t - 2.3 = 7.6$

$2.2t - 2.3 = 7.6$

$+2.3 \quad +2.3$

$\frac{2.2t}{2.2} = \frac{9.9}{2.2}$

$t = 4.5$

~~④ $4.3t - 2.1t - 2.3 = 7.6$~~

④ $8.1 + 3.8h - 5.6h = -7.2$

$8.1 - 1.8h = -7.2$

$-8.1 \quad -8.1$

$\frac{-1.8h}{-1.8} = \frac{-15.3}{-1.8}$

$h = 8.5$

⑤ $\frac{2}{5}c + 4 - \frac{1}{5}c = -9$

$\frac{1}{5}c + 4 = -9$

$-4 \quad -4$

$\frac{\frac{1}{5}c}{\frac{1}{5}} = \frac{-13}{\frac{1}{5}}$

$c = \frac{-13}{1} \times \frac{5}{1} = \frac{-65}{1} = -65$

(6) $2(4s-16)-5s=-5$

$8s-32-5s=-5$

$3s-32=-5$

$+32 \quad +32$

$\frac{3s}{3}=\frac{27}{3}$

$s=9$

(7) $3g-6(g-8)=42$

$3g-6g+48=42$

$-3g+48=42$

$-48 \quad -48$

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

$g=2$

(8) $1.3(8-b)+3.7b=-5.2$

$10.4-1.3b+3.7b=-5.2$

$10.4+2.4b=-5.2$

$-10.4 \quad -10.4$

$\frac{2.4b}{2.4}=\frac{-15.6}{2.4}$

$b=-6.5$

(9) Average = $\frac{\text{total minutes}}{\text{total months}}$

$\frac{43+62+57+x}{4}=55$

$\frac{162+x}{4}=55$

* Multiply both sides by 4 to cancel the fraction out.

$4\left(\frac{162+x}{4}=55\right)$

$4\left(\frac{162+x}{4}\right)=55\times 4$

$162+x=220$

$-162 \quad -162$

$x=58$

(10) Sum of angles in a triangle = 180°

$3x+2x+20+4x-20=180$

$9x+0=180$

$\frac{9x}{9}=\frac{180}{9}$

$x=20$

(11) If half = $3.60, then total bill w/ tip = $7.20

If smoothies only cost $6 together, then you left $1.20 tip, since the total bill w/ tip is $7.20

$6 + 6(x) = 7.20$

(6 → total; 6(x) → tip)

$6 + 6x = 7.20$

$-6 \qquad -6$

$6x = 1.20$

$\frac{6x}{6} = \frac{1.20}{6}$

$x = .2$ (move the decimal 2 spots to the right to change to a %.)

20%