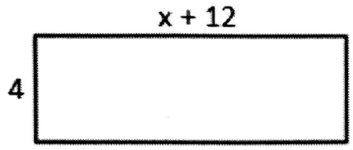
Name: _____ Period: _____

Unit 4: 2B Leveled Practice Questions

Level One: Solve Using Shapes

1.) If the area of the rectangle below is 60, what is the value of x?



$4(x+12)=60$

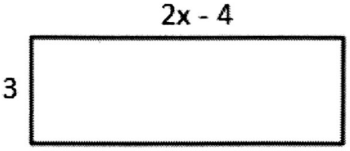
$4x+48=60$

$-48 \quad -48$

$\frac{4x}{4}=\frac{12}{4}$

$x=3$

2.) If the area of the rectangle below is 84, what is the value of x?



$3(2x-4)=84$

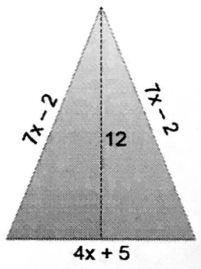
$6x-12=84$

$+12 \quad +12$

$\frac{6x}{6}=\frac{96}{6}$

$x=16$

Ex) If the area of the triangle below is 102 sq units what is the value of x?



$\frac{1}{2} \cdot b \cdot h = 102$

$\frac{1}{2} \cdot 12(4x+5)=102$

$6(4x+5)=102$

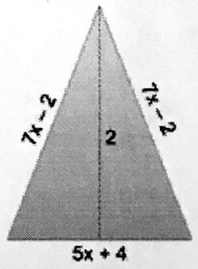
$24x+30=102$

$-30 \quad -30$

$\frac{24x}{24}=\frac{72}{24}$

$x=3$

3.) If the area of the triangle below is 24 sq units what is the value of x?



$\frac{1}{2} \cdot 2(5x+4)=24$

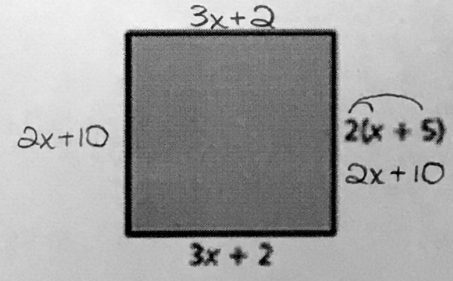
$5x+4=24$

$-4 \quad -4$

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

$x=4$

Ex) If the perimeter of the shape below is 104 units, what is the value of x?



$3x+3x+2x+2x=10x$

$10+2+10+2=24$

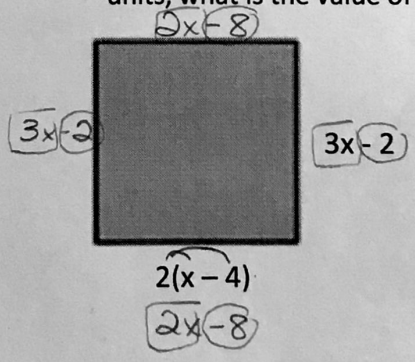
$10x+24=104$

$-24 \quad -24$

$\frac{10x}{10}=\frac{80}{10}$

$x=8$

4.) If the perimeter of the shape below is 20 units, what is the value of x?



$10x-20=20$

$+20 \quad +20$

$\frac{10x}{10}=\frac{40}{10}$

$x=4$

Checkpoint

Level Two: Solve Multi-Step Equations

Solve each equation for the variable.

1.) $4x + 8 - 6x - 12 = 16$

$-2x - 4 = 16$

$+4 \quad +4$

$\frac{-2x}{-2} = \frac{20}{-2}$ $x = -10$

2.) $3(f + 7) + 4f = 42$

$3f + 21 + 4f = 42$

$7f + 21 = 42$

$-21 \quad -21$

$\frac{7f}{7} = \frac{21}{7}$

$f = 3$

Ex) $3(x - 4) - 2(x - 5) = 13$

$3x - 12 - 2x + 10 = 13$

$5x - 2 = 13$

$+2 \quad +2$

$5x = 15$

$x = 3$

4.) $-2(3x + 5) + 4(x + 4) = -4$

$-6x - 10 + 4x + 16 = -4$

$-2x + 6 = -4$

$-6 \quad -6$

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

Ex) Solve for x. $x^2 - 11 = 14$

$+11 \quad +11$

$\sqrt{x^2} = \sqrt{25}$

$x = 5$ or -5

5.) Solve for x. $3x^2 = 108$

$\frac{3x^2}{3} = \frac{108}{3}$

$\sqrt{x^2} = \sqrt{36}$

$x = 6$ or -6

---------- **Checkpoint** ----------

Level Three: Various

1.) When finding the solution for the equation $2x + 3 = 33$, which of the following indicates the order of operations which would be used to solve for x?

A) addition, division

B) addition, multiplication

C) subtraction, multiplication

(D) subtraction, division

2.) When finding the solution for the equation $\frac{x+5}{10} - 6 = 4$, which of the following indicates the order of operations which would be used to solve for x?

A) subtraction, division, addition

B) multiplication, addition, subtraction

(C) addition, multiplication, subtraction

D) multiplication, subtraction, addition

3.) Solve for x. $\frac{1}{5}x - 4 + \frac{2}{5}x = 26$

$\frac{3}{5}x - 4 = 26$

$+4 \quad +4$

$\frac{5}{3} \cdot \frac{3}{5}x = 30 \cdot \frac{5}{3}$ $x = 50$

4.) Solve for x. $2x - 8 = -3x + 7$

$+3x \quad +3x$

$5x - 8 = 7$

$+8 \quad +8$

$\frac{5x}{5} = \frac{15}{5}$ $x = 3$

---------- **Checkpoint** ----------