Warm-up: Solve the equations for x.

1: $\frac{x+8}{4} = 22$ ·4

$x+8 = 88$
$-8 \quad -8$
$x = 80$

2. $-(x+7)+3x=13$

$-x-7+3x=13$
$2x-7=13$
$+7 \quad +7$
$2x=20$

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

3. $23x+11-19x-4=12x-8-9x+11$

$4x+7=3x+3$
$-3x \quad -3x$
$x+7=3$

$x+7=3$
$-7 \quad -7$
$x=-4$

4. $\frac{3}{4}(8x-112)+72=4x+3-2x+17$

$6x-84+72=2x+20$
$6x-12=2x+20$
$-2x \quad -2x$
$4x-12=20$
$+12 \quad +12$
$\frac{4x}{4}=\frac{32}{4}$
$x=8$

Notes 1-2

Int 2 Acc **Solving with Area and Perimeter** **Unit 1**

	Rectangle	Triangle
Perimeter The length around a figure	$2l+2w$ Add all the sides	Add all the sides
Area The measurement inside a figure	$l \cdot w$ or $b \cdot h$	$\frac{1}{2} \cdot b \cdot h$ $\frac{bh}{2}$

Example 1: If the area of the rectangle below is 56 square units, find the value of x.

$A = bh$

$56 = \left(\frac{2}{7}x+6\right)7$

$56 = 2x+42$

$-42 \quad -42$

$\frac{14}{2} = \frac{2x}{2}$

$7 = x$

$x = 7$

Example 2: Set up an expression that would calculate the area and perimeter of the rectangle.

$A = (5x-2)3x$

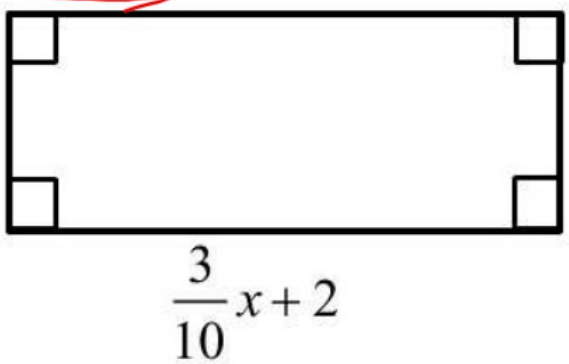
$15x^2 - 6x$

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

$6x + 10x - 4$

$16x - 4$ perimeter

Example 3: If the perimeter of the rectangle below is $x+12$ units, find the value of x.



$x+12 = \frac{2}{5}x + \frac{2}{5}x + \frac{3}{10}x + 2 + \frac{3}{10}x + 2$

$x+12 = \frac{7}{5}x + 4$

$-x \quad -x$

$12 = \frac{2}{5}x + 4$

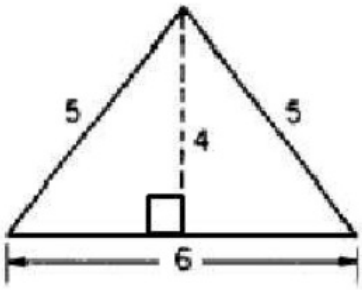
$-4 \quad -4$

$8 = \frac{2}{5}x$

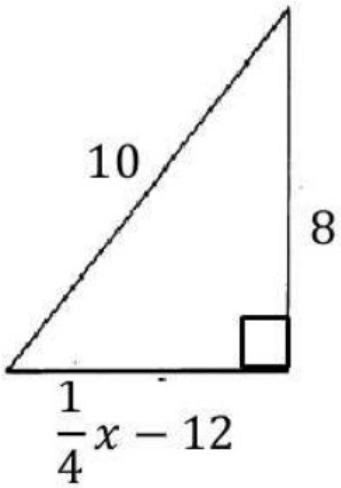
$\frac{8}{\frac{2}{5}} = \frac{\frac{2}{5}x}{\frac{2}{5}}$

$20 = x$

Example 4: Find the perimeter and area of the triangle.



Example 5: If the area of the triangle below is 48 square units, find the value of x.



$A = \frac{1}{2}bh$

$48 = \frac{1}{2}(\frac{1}{4}x - 12)(8)$

$48 = \frac{1}{2}(8)(\frac{1}{4}x - 12)$

$48 = 4(\frac{1}{4}x - 12)$

$48 = x - 48$

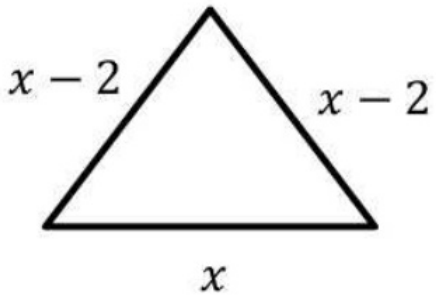
$+48 \quad +48$

$96 = x$

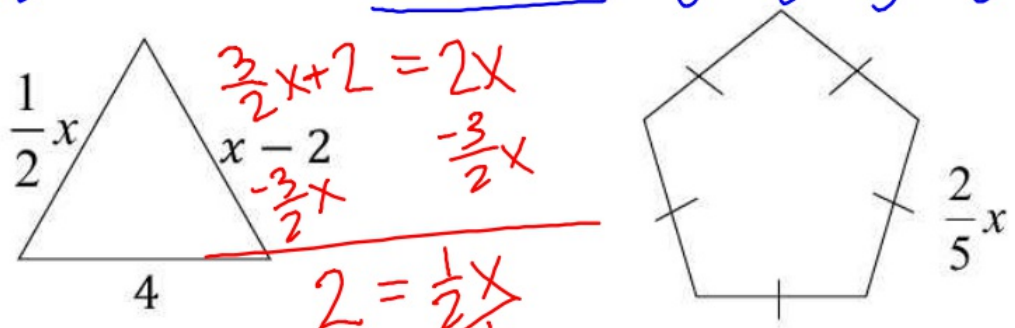
$x = 96$

If the perimeter of the triangle is 32 units, find the value of x.

Example 6: If the perimeter of the triangle below is $(2x + 1)$ units, find the value of x.



Example 7: Write an equation to find x so that the two polygons have the same perimeter. Then solve.



$\frac{1}{2}x + x - 2 + 4$ ——— $\frac{2}{5}x + \frac{2}{5}x + \frac{2}{5}x + \frac{2}{5}x + \frac{2}{5}x$

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

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

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

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

$4 = x$

$x = 4$

Example 8: Write an equation to find x so that the two polygons have the same area. Then solve.