Lesson 2.4 Area Word Problems
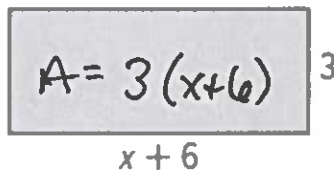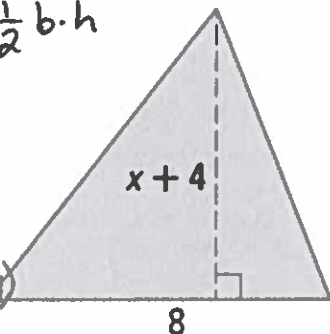
1. Find the value of x so that the figures have the same area.

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

$A = \frac{b \cdot h}{2}$

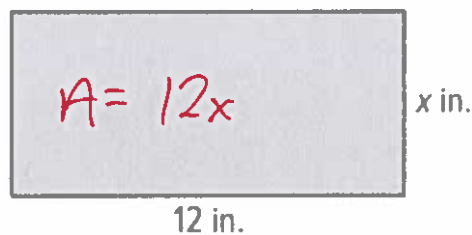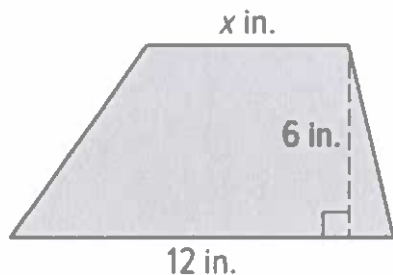$A = \frac{1}{2} \cdot 8 \cdot (x+4)$

$A = 4(x+4)$

$x + 4$

8

$A = 3(x+6)$ 3

$x + 6$

$A tri = A rect.$

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

$4x + 16 = 3x + 18$

$-3x \quad -16 \quad -3x \quad -16$

$\boxed{x = 2}$

2. Find the value of x so that the figures have the same area. The area of a trapezoid formula is $A = \frac{1}{2} h(b_1 + b_2)$.

x in.

6 in.

12 in.

$A = 12x$

x in.

12 in.

$A = \frac{1}{2} \cdot 6 (12 + x)$

$3(12 + x) = 12x$

$36 + 3x = 12x$

$-3x \quad -3x$

$\frac{36}{9} = \frac{9x}{9}$ $\boxed{x = 4}$