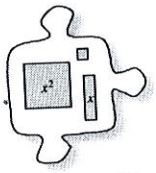
6.2.2 What is the area?



Area of a Rectangular Shape

6-79 Find the area of each rectangle below. Write an **expression** that goes with your work.

a) 0.75 m, 1.8 m

b) 

c) 15 cm, 25 cm

6-80 Working backwards: On the rectangles below, the area and length are given. Write an expression and determine the width of each.

a) $45\ m^2$, $9\ m$

b) $224\ ft^2$, 14 ft

c) $\frac{6}{7}\ in^2$, $\frac{4}{7}\ in$

6-69 Use **substitution** to determine if the following two **expressions are equivalent.**

$3(4x - 2)$ $\quad$ $12x - 2$

6-74. Are the following **expressions equivalent?** $x = 1$

$3(4x - 2) + 8$ $\quad$ $2(6x + 1)$

$3(4\cdot1-2)+8$ $\quad$ $2(6\cdot1+1)$

$3(2)+8$ $\quad$ $2(7)$

$6+8=14$ $\quad$ 14

Yes, they are equivalent.

Vocabulary-

Substitution: Replacing variables with a value

Equivalent Expressions: Two expressions are equal if they have the same value

6-6-1* Choose a value for x * 6-74 Front

Ex $x = 1$

$3(4\cdot1-2)$ $\quad$ $12\cdot1-2$

$3(4-2)$ $\quad$ $12-2$

$3(2)$ $\quad$ 10

6

These expressions are not equal because 6 does not equal 10.

6-79 a) 0.75×1.8

$\boxed{1.35 m^2}$

	70	5
10	700	50
8	560	40

1260
90
1350 ③

b) 6×9

$\boxed{54 \text{ square units}}$

c) 15×25

$\boxed{375 cm^2}$

	10	5
20	200	100
5	50	25

350
25
375

6-80 a) $45 \div 9$

$\boxed{5m}$

The width is 5m.

b) $224 \div 14$

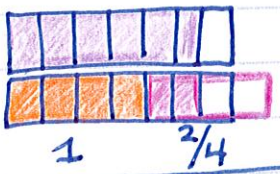
$\boxed{16ft}$

$$\begin{array}{r} 016 \\ 14\overline{)224} \\ -14\downarrow \\ \hline 84 \\ -84 \\ \hline 0 \end{array}$$

$$\begin{array}{r} {}^{2}14 \\ \times\ 6 \\ \hline 84 \end{array}$$

The width is 16ft.

c) $\frac{6}{7} \div \frac{4}{7} \rightarrow$



$= 1\frac{2}{4} = \boxed{1\frac{1}{2} \text{ in}}$

$\frac{6}{\cancel{7}} \times \frac{\cancel{7}}{4} = \frac{42}{28} \div \boxed{7} = \boxed{\frac{6}{4} = 1\frac{2}{4} = \frac{3}{2} = 1\frac{1}{2} = 1.5}$

The width is $1\frac{1}{2}$ in.

6-69 *Choose a value for x* **6-74** Front

Ex $x = 1$

$3(4 \cdot 1 - 2)$
$3(4-2)$
$3(2)$
6

$12 \cdot 1 - 2$
$12 - 2$
10

These expressions are not equal because 6 does not equal 10.