

1.7 Formulas

A formula is an equation that states a rule for the relationship between certain quantities.

Formula for temperature: $F = \frac{9}{5}C + 32$

This formula allows us to change degree measures in Celsius to Fahrenheit, and vice versa.

Example 1

If the temperature is 25 C°, what is the temperature in Fahrenheit?

$$F = \frac{9}{5} \cdot 25 + 32$$

$$F = 45 + 32$$

$$\boxed{77^\circ \text{F}}$$

Formula for area of a triangle:

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

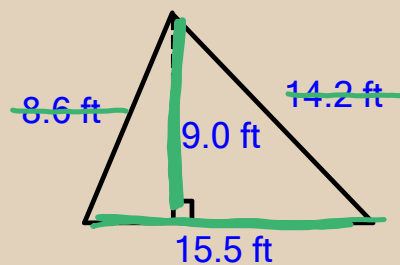
form a
right
angle

$\left\{ \begin{array}{l} b = \text{base} \\ h = \text{height} \end{array} \right.$

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

Example 2

Find the area of the triangle below.



$$A = \frac{(15.5 \text{ ft})(9.0 \text{ ft})}{2}$$

$$\boxed{A = 69.75 \text{ ft}^2}$$

Formula for area of a rectangle: $A = lw$

l = length
 w = width

Example 3

Find the area of a rectangle with a length of 3.5 mm and a width of 2.4 mm.

$$A = lw$$
$$A = (3.5)(2.4)$$
$$A = 8.4 \text{ mm}^2$$

PHRASE  EXPRESSION

SENTENCE  EQUATION

The sentence for an equation will have one of the following:

- is
- equals
- is equal to
- is the same as
- is as much as
- is identical to

Write the sentence as an equation.

4. The division quotient of seven and a number c is twenty-one.

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

5. The subtraction difference of a number h and three is eight.

$$h - 3 = 8$$

6. Two-thirds of a number n increased by six is the same as sixteen.

$$\frac{2}{3}n + 6 = 16$$

7. The number p is equal to twice the sum of x & y .

$$p = 2(x + y)$$

Write the sentence as an equation.

8. Fifty is the same as the number t decreased by seven.

$$50 = t - 7$$

9. The quotient of three and the difference of b and four is twelve.

$$\frac{3}{b-4} = 12$$

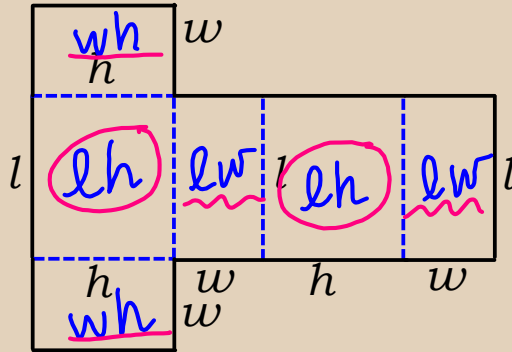
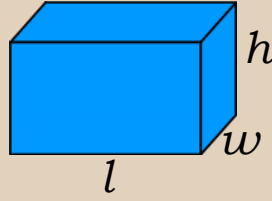
10. The area of a circle equals the product of π and the square of the radius.

$$A = \pi r^2$$

11. The distance is equal to the product of the rate and the time.

$$d = rt$$

Find the surface area of a rectangular solid.



SA =

Equation for Surface Area: $2wh + 2lh + 2lw$