

## Definition of Formula for Algebra Class

Whenever I ask you what a **formula** is, this is what I want to hear.

A **formula** is

an equation that contains more than one kind of variable.

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### 1 Formula:

$$\text{distance} = \text{rate} \times \text{time}$$

$$d = rt$$

Given:  $t = 4$ ,  $d = 24$

Find:  $r$

$$d = rt$$

$$\frac{24}{4} = \frac{r \cdot 4}{4}$$

$$6 = r$$



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**2 Formula:**  $P = 2L + 2W$

Given:  $W = 4, P = 26$

Find:  $L$

$$P = 2L + 2W$$

$$26 = 2L + 2 \cdot 4$$

$$26 = 2L + 8$$

$$18 = 2L$$

$$9 = L$$

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**3 Formula:**  $V = \frac{AH}{3}$

Given:  $V = 28, H = 7$

Find:  $A$

$$V = \frac{AH}{3}$$

$$3(28) = \left( \frac{A \cdot 7}{3} \right) \cdot \frac{3}{1}$$

$$\frac{84}{7} = \frac{7A}{7}$$

$$12 = A$$

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4 Formula:  $I = Prt$

Given:  $I = 118.80$ ,  $P = 220$ ,  $r = 0.09$

Find:  $t$

$$I = Prt$$

$$118.8 = 220 \cdot 0.09 \cdot t$$

$$\frac{118.8}{19.8} = \frac{19.8t}{19.8}$$

$$6 = t$$

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5 Formula:  $A = \frac{(B + b)h}{2}$

Given:  $A = 171$ ,  $b = 20$ ,  $B = 18$

Find:  $h$

$$A = \frac{(B + b)h}{2}$$

$$171 = \frac{(18 + 20)h}{2}$$

$$171 = \frac{38h}{2}$$

$$171 = \frac{19 \cdot 2 \cdot h}{2}$$

$$\frac{171}{19} = \frac{19h}{19}$$

$$9 = h$$

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**6 Formula:**  $F = 1.8C + 32$   
(Converts Celsius to Fahrenheit)

Convert 40 degrees Celsius  
to degrees Fahrenheit.

$$F = 1.8C + 32$$

$$F = 1.8(40) + 32$$

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**7 Formula:**  $F = 1.8C + 32$   
(Converts Celsius to Fahrenheit)

Convert -31 degrees **Fahrenheit**  
to degrees Celsius.

$$F = 1.8C + 32$$

$$-31 = 1.8C + 32$$

$$\frac{-63}{1.8} = \frac{\cancel{1.8}C}{\cancel{1.8}}$$

$$-35 = C$$

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You have taken up gardening for relaxation and have decided to fence in your new rectangular shaped masterpiece. The length of the garden is 4 meters, and 60 meters of fencing is required to completely enclose it.

What common formula could be useful here?

$$P = 2L + 2W$$



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### 8 What is the width of the garden?



You have taken up gardening for relaxation and have decided to fence in your new rectangular shaped masterpiece. The length of the garden is 4 meters, and 60 meters of fencing is required to completely enclose it.

What common formula could be useful here?

$$P = 2L + 2W$$

$$60 = 2 \cdot 4 + 2W$$

$$60 = 8 + 2W$$

$$52 = 2W$$

$$26 = W$$

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Ted drove to his grandparents' house for a holiday weekend. The total distance (one-way) was 387 miles and it took him 9 hours.

What common formula could be useful here?

$$D = RT$$



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## 9 How fast was Ted driving, on the average?



Ted drove to his grandparents' house for a holiday weekend. The total distance (one-way) was 387 miles and it took him 9 hours.

What common formula could be useful here?

$$D = RT$$

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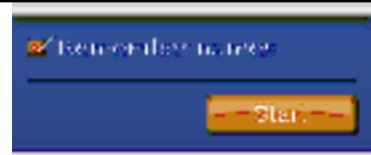
Sally is making a cover for a round table. When finished, the cover will fit exactly with no excess hanging off. Sally has to cut the fabric circle with a 4 inch larger diameter than the table to allow for hemming. The table has a diameter of 56 inches.

What common formula could be useful here?



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**10 How many square inches of fabric will there be in the cover?  
(Round to the nearest whole number.)**



Sally is making a cover for a round table. When finished, the cover will fit exactly with no excess hanging off. Sally has to cut the fabric circle with a 4 inch larger diameter than the table to allow for hemming. The table has a diameter of 56 inches.

What common formula could be useful here?

$$A = \pi r^2$$

You will use the estimate of 3.14 for  $\pi$ .

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You have a cylindrical cooking pot whose radius is 6 inches and whose height is 7 inches. You will fill it from individual cans of soup. Each can has holds 20 cubic inches of soup.

What common formula could be useful here?

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### 11 How many full cans of soup can fit in the pot?



You have a cylindrical cooking pot whose radius is 6 inches and whose height is 7 inches. You will fill it from individual cans of soup. Each can has holds 20 cubic inches of soup.

What common formula could be useful here?

$$V = \pi r^2 h$$

You will use the estimate of 3.14 for  $\pi$ .

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