

Name : \_\_\_\_\_

## Rearranging Formulae

Customary units: S1

- 1) The volume  $V$  of a cone is calculated using the formula  $V = \frac{1}{3} \pi r^2 h$ , where  $r$  is the radius and  $h$  is the height of the cone. Rearrange the formula, to make radius( $r$ ) the subject.

$$r = \underline{\hspace{4cm}}$$

The volume and height of a cone are  $84\pi$  cubic feet and 7 feet respectively. Find the radius of the cone.

$$r = \underline{\hspace{4cm}}$$

- 2) The formula to find the speed( $s$ ) of an object is  $s = \frac{d}{t}$ , where  $d$  is the total distance and  $t$  is the time taken to cover the distance. Make distance( $d$ ) the subject of the formula.

$$d = \underline{\hspace{4cm}}$$

Frank drove his car at an average speed of 43 mph for 2.5 hours. Determine the distance covered by Frank.

$$d = \underline{\hspace{4cm}}$$

- 3) The perimeter  $P$  of a rectangle is calculated using the formula  $P = 2(l + w)$ , where  $l$  and  $w$  are the length and width of the rectangle. Rearrange the formula to make length( $l$ ) the subject.

$$l = \underline{\hspace{4cm}}$$

Find the length of the rectangle, if the perimeter is 56 feet and width is 8 feet.

$$l = \underline{\hspace{4cm}}$$

- 4) The force  $F$  of an object is calculated by multiplying its mass ' $m$ ' with acceleration ' $a$ '. Rearrange the formula  $F = ma$  to make mass( $m$ ) the subject.

$$m = \underline{\hspace{4cm}}$$

Determine the mass of an object, if it requires a force of  $6,000 \text{ kg}\cdot\text{m/s}^2$  to accelerate at the rate of  $2 \text{ m/s}^2$ .

$$m = \underline{\hspace{4cm}}$$

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## Answer key

### Rearranging Formulae

Customary units: S1

- 1) The volume  $V$  of a cone is calculated using the formula  $V = \frac{1}{3} \pi r^2 h$ , where  $r$  is the radius and  $h$  is the height of the cone. Rearrange the formula, to make radius( $r$ ) the subject.

$$r = \frac{\sqrt{\frac{3V}{\pi h}}}{1}$$

The volume and height of a cone are  $84\pi$  cubic feet and 7 feet respectively. Find the radius of the cone.

$$r = \underline{\text{6 feet}}$$

- 2) The formula to find the speed( $s$ ) of an object is  $s = \frac{d}{t}$ , where  $d$  is the total distance and  $t$  is the time taken to cover the distance. Make distance( $d$ ) the subject of the formula.

$$d = \underline{st}$$

Frank drove his car at an average speed of 43 mph for 2.5 hours. Determine the distance covered by Frank.

$$d = \underline{107.5 \text{ miles}}$$

- 3) The perimeter  $P$  of a rectangle is calculated using the formula  $P = 2(l + w)$ , where  $l$  and  $w$  are the length and width of the rectangle. Rearrange the formula to make length( $l$ ) the subject.

$$l = \frac{\frac{P}{2} - w}{1}$$

Find the length of the rectangle, if the perimeter is 56 feet and width is 8 feet.

$$l = \underline{20 \text{ feet}}$$

- 4) The force  $F$  of an object is calculated by multiplying its mass ' $m$ ' with acceleration ' $a$ '. Rearrange the formula  $F = ma$  to make mass( $m$ ) the subject.

$$m = \frac{F}{a}$$

Determine the mass of an object, if it requires a force of  $6,000 \text{ kg}\cdot\text{m/s}^2$  to accelerate at the rate of  $2 \text{ m/s}^2$ .

$$m = \underline{3,000 \text{ kg}}$$