Literal Equations and Dimensional Analysis

MATH MONKS

Solve each equation for the variable indicated.

1. $\frac{2}{3}y + v = x$, for y

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2. $mx + 4y = 3t$, for x

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3. $\frac{2}{5}h + g = d$, for h

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4. $ax - c = b$, for x

Solve each equation for the dimension indicated.

5. The volume of a cylinder V is given by the formula $V = \pi r^2 h$, where r is the radius and h is height.

   a) Solve the formula for h.

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   b) Find the height of a cylinder with volume 2500π cubic feet and radius 10 feet.

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6. The volume of a box V is given by the formula $V = lwh$, where l is the length, w is the width, and h is height.

   a) Solve the formula for h.

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   b) Find the height of a box with a volume of 50 cubic meters, length of 10 meters, and width of 2 meters.

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Answers

1. $\frac{2}{3}y + v = x$, for y

$y = \frac{3}{2}(x - v)$

2. $mx + 4y = 3t$, for x

$x = \frac{3t - 4y}{m}$

3. $\frac{2}{5}h + g = d$, for h

$h = \frac{5}{2}(d - g)$

4. $ax - c = b$, for x

$x = \frac{b + c}{a}$

5. The volume of a cylinder V is given by the formula $V = \pi r^2 h$, where r is the radius and h is height.

   a) Solve the formula for h.

   $h = \frac{V}{\pi r^2}$

   b) Find the height of a cylinder with volume 2500π cubic feet and radius 10 feet.

   h = 25 feet

6. The volume of a box V is given by the formula $V = lwh$, where l is the length, w is the width, and h is height.

   a) Solve the formula for h.

   $h = \frac{V}{lw}$

   b) Find the height of a box with a volume of 50 cubic meters, length of 10 meters, and width of 2 meters.

   h = 2.5 meter