

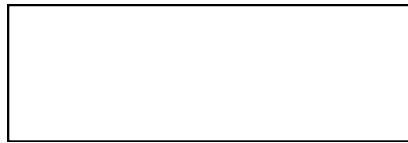
Grade 9 Mathematics Worksheet

Area 2

Questions:

1. The area of a triangle is given by $A = \frac{5}{3}x^4y^3$. If the height of the triangle is $h = \frac{5}{2}x^2y^2$, what is the length of its base?
2. The area of the rectangle with side length $4x$ cm is given as $6x^2 + \frac{4}{3}x$. What is the length of the other side?

$4x$ cm



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Solution

$$\begin{aligned}1. \quad A &= \frac{1}{2} \text{Base} \times \perp \text{Height} = \frac{5}{3} x^4 y^3 \\ \therefore \text{Base} \times \frac{5}{2} x^2 y^2 &= 2 \times \frac{5}{3} x^4 y^3 \\ \therefore \text{Base} &= \frac{\frac{10}{3} x^4 y^3}{\frac{5}{2} x^2 y^2} = \frac{10}{3} \times \frac{2}{5} \times x^2 y \\ \therefore \text{Base} &= \frac{4}{3} x^2 y\end{aligned}$$

$$\begin{aligned}2. \quad \text{Area} &= 6x^2 + \frac{4}{3}x = 4x \times y \\ \therefore y &= \frac{6x^2 + \frac{4}{3}x}{4x} \times \frac{3}{3} \\ \therefore y &= \frac{18x^2 + 4x}{12x} \\ \therefore y &= \frac{3}{2}x + \frac{1}{3}\end{aligned}$$

Learners who are not well versed at '*changing the subject of the formula*' usually make mistakes here. This skill is necessary for other learning areas and mathematics.