

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) What is the difference between a subscript and an exponent?

Answer: An exponent is a mathematical operation. A subscript is used to define a variable a specific feature or component of a variable.

2) What is the difference between a formula and a working equation?

Answer: A formula is a basic equation, usually expressed in letters and numbers. A working equation is created when the desired variable is isolated on one side of the equation.

3) What is the purpose of estimation when problem solving?

Answer: Estimating the expected answer in problem solving can serve as a check to make sure the answer is correct.

4) Solve for m in the formula $F = ma$.

Answer: $m = F/a$

5) Solve for t in the formula $s = 1/2 (v_f + v_i)t$. □

Answer: $t = 2s / (v_f + v_i)$

6) Solve for v_f in the formula $s = 1/2 (v_f + v_i)t$. □

Answer: $v_f = (2s/t) - v_i$

7) Solve for h in $PE = mgh$. □

Answer: $h = PE / mg$

8) Given $V = \pi r^2 h$, if $r = 5.0$ cm and $V = 250$ cm³, what is h?

Answer: $h = 3.2$ cm

9) Given $A = 1/2 bh$, if $b = 10.0$ cm and $h = 12.2$ cm, what is A? □

Answer: $A = 61.0$ cm²

10) A cone has a volume of 315 cm³ and a radius of 7.50 cm. What is its height? □

Answer: $h = 5.35$ cm

11) A right triangle has a side of 82.4 mm and a side of 19.6 mm. Find the length of the hypotenuse. □

Answer: 84.7 mm

12) Given a cylinder with a radius of 14.4 cm and a height of 16.8 cm, find the lateral surface area.

Answer: 1520 cm²

13) A rectangle has a perimeter of 80.0 cm. One side has a length of 28.0 cm. What is the length of the adjacent side? □

Answer: 12.0 cm

14) The formula for the volume of a cylinder is $V = \pi r^2 h$. If $V = 4520$ m³ and $h = 36.0$ m, find r. □

Answer: $r = 6.32$ m

15) The formula for the area of a triangle is $A = \frac{1}{2}bh$. If $b = 3.12$ m and $A = 82.6$ m², find h . □

Answer: $h = 52.9$ m

16) A rectangular parking lot measures 80.0 m by 75.0 m. If the parking lot needs three sections that each measure 8.00 m by 8.00 m for tree plantings, how much area is left for parking spaces? □

Answer: $A = 5810$ m²