

## Unit 1 Lesson 2 Homework

I. Evaluate the expression for the given value of the variable.

1.  $y^4 \div 8$  when  $y = 4$

2.  $3r^2 - 17$  when  $r = -6$

3.  $27 - \frac{24}{b}$  when  $b = 8$

4.  $\frac{9}{10} \cdot y - \frac{3}{10}$  when  $y = \frac{1}{2}$

II. Decide whether the statement is true or false. If it is false, give a counterexample.

5.  $(-a) \cdot (-b) = (-b) \cdot (-a)$

6. The product  $(-a) \cdot (-1)$  is always positive.

7. If  $a > b$ , then for any real number  $c$ ,  $a \cdot c > b \cdot c$ .

III. Evaluate the expression for the given value(s) of the variable(s).

8.  $\frac{15x^2+10}{y}$  when  $x = -3$  and  $y = \frac{2}{3}$

9.  $\frac{3a-4b}{ab}$  when  $a = -\frac{1}{3}$  and  $b = \frac{1}{4}$

10. Find the area of a trapezoid whose height is 2m and whose bases are 6m and 10m.  $A = \frac{1}{2}(b_1 + b_2)h$

11. Find the volume of a cylinder whose height is 3cm and whose diameter is 10cm.  $V = \pi r^2 h$

**IV. Write the algebraic expression.**

12. Eleven decreased by the quantity of four plus a number.
13. Four increased by 11 times a number.
14. Four times the difference of  $x$  and 7.
15. Nine more than a number.
16. Three more than half of a number.
17. The quotient of a number and two tenths.
18. The ratio of two cubed and a number.
19. Five squared minus a number.
20. The product of four and a number.
21. The product of two and the sum of six and a number.