

Literal Equations – Classwork

Name Key Date \_\_\_\_\_

Solve for the indicated variable.

1. Solve for A:  $P = A - i$

$$P + i = A$$

$$\boxed{A = P + i}$$

2. Solve for g:  $T = 2g + f$

$$\frac{T - f}{2} = \frac{2g}{2}$$

$$\boxed{g = \frac{T - f}{2}}$$

3. Solve for t:  $8t + s = c$

$$\frac{8t}{8} = \frac{c - s}{8}$$

$$\boxed{t = \frac{c - s}{8}}$$

4. Solve for B:  $3V = \frac{1}{3}Bh$

$$\frac{3V}{h} = \frac{Bh}{h}$$

$$\boxed{B = \frac{3V}{h}}$$

5. Solve for W:  $P = 2W + 2L$

$$\frac{P - 2L}{2} = \frac{2W}{2}$$

$$\boxed{W = \frac{P - 2L}{2}}$$

6. Solve for h:  $L = 2\pi r h$

$$\frac{L}{2\pi r} = h$$

$$\boxed{h = \frac{L}{2\pi r}}$$

7. Solve for L:  $T = \pi r L + B$

$$\frac{T - B}{\pi r} = \frac{\pi r L}{\pi r}$$

$$\boxed{L = \frac{T - B}{\pi r}}$$

8. Solve for v:  $v d = \frac{m}{d}$

$$\frac{v d}{d} = \frac{m}{d}$$

$$\boxed{v = \frac{m}{d}}$$

9. Solve for h:  $2A = \frac{1}{2}Bh$

$$\frac{2A}{B} = \frac{Bh}{B}$$

$$\boxed{h = \frac{2A}{B}}$$

10. Solve for b:  $P = a + b + c$

$$P - c = a + b$$

$$P - c - a = b$$

$$\boxed{b = P - c - a}$$

11. Solve for b:  $A = bh$

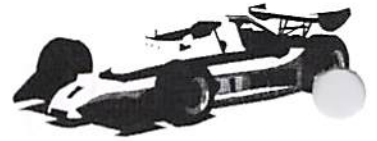
$$\boxed{b = \frac{A}{h}}$$

12. Solve for h:  $2A = \frac{1}{2}h(b_1 + b_2)$

$$\frac{2A}{b_1 + b_2} = \frac{h(b_1 + b_2)}{b_1 + b_2}$$

$$\boxed{h = \frac{2A}{b_1 + b_2}}$$

13. One useful formula from science says that distance = rate X time.



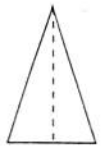
We usually write  $d = rt$  to save space.

Use the formula  $d = rt$  to answer the following questions by solving for the **specified variable** first.

Leslie is driving her old Volkswagen Bug to college and she wants to get there in 3 hours to meet her roommate. If her college is 200 miles from home how **fast** will she have to drive?

$$\frac{d}{t} = \frac{rt}{t} \quad \boxed{r = \frac{d}{t}} \quad r = \frac{200}{3} = \boxed{66.\bar{6} \text{ mph}}$$

14. Another useful formula tells us how the sides of a triangle relate to the area. We use the formula  $A = \frac{1}{2} b \cdot h$ .



Pam wants to plant a triangular garden in her backyard and has 45 square feet of soil to use. She wants the base of her garden to line up against the back of her shed which is 10ft long. What will be the **height** of her garden?

$$2 \cdot A = \frac{1}{2} bh \cdot 2 \quad \boxed{h = \frac{2A}{b}} \quad h = \frac{2(45)}{10} = \frac{90}{10} = 9$$
$$\frac{2A}{b} = \frac{bh}{b} \quad \boxed{9 \text{ feet}}$$

15. The formula for computing the balance of an account with compound interest added annually is  $A = P(1+r)$  where  $A$  represents the amount of money in the account including interest,  $P$  is the amount in the account before interest and  $r$  is the interest rate written as a decimal

0.04

If Holly wants a total of \$1000 in the bank in a year and has an interest rate of 4% how much money should she put in the bank **initially**?

$$\frac{A}{1+r} = \frac{P(1+r)}{1+r} \quad \boxed{P = \frac{A}{1+r}} \quad P = \frac{1000}{1+0.04} = \frac{1000}{1.04}$$
$$= \boxed{\$961.53}$$