**Manipulating Formulas**

**Name**

Solve for the indicated variable in each formula below. Assign a shape to represent each variable. Rearrange the shapes, using the properties of equality, to solve for the indicated shape. Write your algebraic solution in the space provided.

1. *i* = *prt* (interest = principal ∙ rate ∙ time)

a) Solve for *p*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *r*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ c) Solve for *t*: \_\_\_\_\_\_\_\_\_\_\_\_

2. *V* = π*r*2*h* (volumn of a cylinder = pi ∙ radius2 ∙ height)

a) Solve for *h*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *r*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. *C* = 2π*r* (circumference of a circle = 2 ∙ pi ∙ radius)

a) Solve for *r*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for π: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. *A* = *bh* (area of a triangle = base ∙ height)

a) Solve for *b*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *h*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. *A* = *h* (*b1* + *b2*) [area of a trapezoid = height ∙ (base1 + base2)]

a) Solve for *h*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *b1*: \_\_\_\_\_\_\_\_\_\_\_\_\_ c) Solve for *b2*: \_\_\_\_\_\_\_\_\_\_

6. *d* = *rt* (distance = rate ∙ time)

a) Solve for *r*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *t*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. *Ax* + *By* = *C* (general form of a linear equation)

a) Solve for *y*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *x*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. *y* = *mx* + *b* (slope-intercept form for the equation of a line)

a) Solve for *x*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *m*: \_\_\_\_\_\_\_\_\_\_\_\_\_ c) Solve for *b*: \_\_\_\_\_\_\_\_\_\_\_

9. *y* − *y*1 = *m*(*x* − *x*1 ) (point-slope form for the equation of a line)

a) Solve for *y*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) Solve for *m*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. *C* = (*F* − 32) [Celsius temperature = (Fahrenheit temperature − 32)]

a) Solve for *F*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_