***Background:*** When a formula is solved for a variable, that variable has a *coefficient* of 1 and an exponent of 1. That variable is said to be written in terms of the other variables.

For example, $K=C+273$ converts Celsius temperatures to Kelvin measurements. This is solved for K (the coefficient is 1 and the exponent is 1). To write in terms of C, we must “undo” the operations to isolate C (just like solving for a variable).

$$K-273=C+273-273$$

$$K-273=C$$

 $K=C+273$ and $K-273=C$ are **equivalent formulas** because every pair of values of K and C that works in the first formula also work in the second formula. *An important use of equivalent formulas arises when we need to input equations or formulas into a graphing calculator.*

***Directions:*** Given each formula below, solve for the indicated variable.

1. $I = Prt$ (Interest = Principal × rate × time – this is the simple interest formula)
	1. Solve for P:
	2. Solve for r :
	3. Solve for t :
2. $W = VA$ (watts = volts × amps)
	1. Solve for V:
	2. Solve for A:
3. $C = 2πr$ (Circumference of a circle)
	1. Solve for r:
	2. Solve for π:
4. A$ = ½ bh $(Area of a triangle)
	1. Solve for b:
	2. Solve for h:
5. $A = ½ h (b1 + b2)$ (Area of a trapezoid)
	1. Solve for h:
	2. Solve for b1:
	3. Solve for b2:
6. $d = rt$ (Distance = rate × time)
	1. Solve for r:
	2. Solve for t:
7. $Ax + By = C$ (General form of a linear equation).
	1. Solve for y:
	2. Solve for x:
8. $y = mx + b$ (Slope-intercept form of a line).
	1. Solve for *x*:
	2. Solve for *m*:
	3. Solve for *b*:
9. 9.$y – y1 = m(x – x1 )$ (Point-slope form of a line).
	1. Solve for *y*:
	2. Solve for *m*:
10. $C =\frac{5}{9}(F – 32)$ (Celsius temperature related to Fahrenheit temperature).
	1. Solve for F:
11. $V=IR$ (Voltage = Current × Resistance)
	1. Solve for *I:*
	2. Solve for *R*: