

## Math Proficiency for Physics Success!

In order to be successful in CCS High School Physics, students need to have a good grasp of algebra and trigonometry. If they are not proficient with these skills and able to solve all of the following problems, they will struggle with physics. Please be sure your student's math skills are up to par and if not, learn and practice these skills very well over the summer.

### ALGEBRA

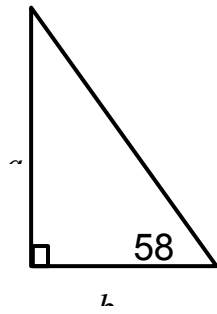
1. Solve the following for  $y$ :  $x = \frac{ab^2}{y}$
2. Now, solve the same equation for  $b$ .
3. You need to clearly understand the difference between *directly proportional* and *indirectly proportional*. Make up any equation that shows  $x$  directly proportional to  $y$ .
4. Now, make up any equation that shows  $x$  indirectly proportional to  $y$ .
5. Consider the following equation:  $x = \frac{3y}{z^2}$  How would  $x$  change if  $y$  were doubled?
6. Considering the same equation from problem 5, how would  $x$  change if  $z$  were doubled?
7. Following are two equations for  $x$ . Set them equal to each other and then solve for  $y$ :

$$x = \frac{5ab}{y} \text{ and } x = a^2c$$

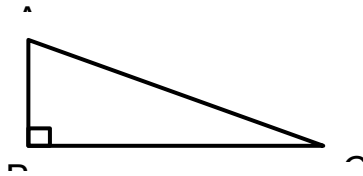
### SCIENTIFIC NOTATION

1. Solve:  $F = (9.0 \times 10^9) \times \frac{(2.0 \times 10^{-6})(-3.0 \times 10^{-6})}{(0.35)^2}$

### BASIC TRIGONOMETRY



1. Consider the following right triangle. Solve for  $a$  and  $b$ .



2. Consider the following right triangle. If  $AB = 2$  and  $BC = 6.5$ , what is the measure of angle  $C$ ?