ATI TEAS MATH UNDERSTANDING RATIOS AND PROPORTIONS

UNDERSTANDING RATIO QUESTIONS
Ratio questions test the applicant on their ability to compare numbers.

For example: Jose received 9 toys and 12 stocking stuffers for Christmas. What is the ratio of toys to stocking stuffers that Jose received?

The ratio can be expressed in three different ways: 9 to 12 (written form), 9:12 (colon form), or 9/12 (fraction form)

UNDERSTANDING PROPORTIONS
Some ratio questions will require an extra step using proportions to solve the operation. Proportions are operations where two ratios are equally set to each other.

For example, Calvin purchased 4 sweaters for a total of $25.00. How much does it cost him to purchase 6 more sweaters if he buys them at the same price per sweater?
UNDERSTANDING PROPORTIONS

For example, Calvin purchased 4 sweaters for a total of $25.00. How much does it cost him to purchase 6 more sweaters if he buys them at the same price per sweater?

In order to solve this problem, we must first discover the proportion. We begin by creating two ratios and set them equal to one another.

\[
\frac{4\text{ sweaters}}{\$25} = \frac{6\text{ sweaters}}{a}
\]

The operation is asking us to find the cost, \(a\), for the 6 sweaters. Cross multiply 4 sweaters \(x\) \(a\) and \$25 \(x\) 6 sweaters.

For example: Solve for \(a\)

\[
4 \times a = \$25 \times 6
\]

\[
4a = \$25 \times 6 \text{ (first multiply to the left of the equal sign)}
\]

\[
4a = \$150 \text{ (multiply to the right of the equal sign)}
\]

\[
\frac{4a}{4} = \frac{\$150}{4} \text{ (divide each side of the equal sign by 4)}
\]

\[
a = \$37.50
\]

The correct answer is $37.50 to purchase 6 sweaters at the same rate.