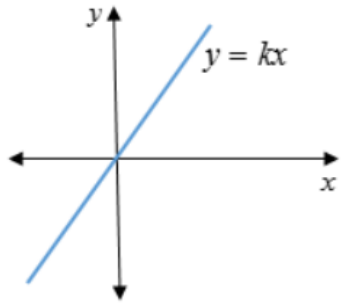
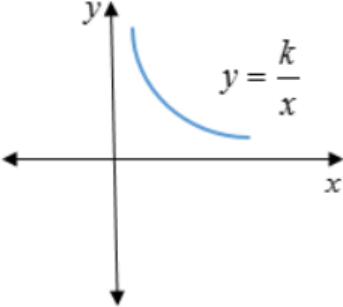
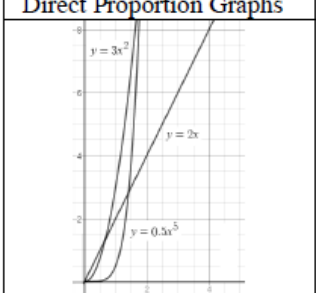


Topic: Proportion

Topic/Skill	Definition/Tips	Example
<p>1. Direct Proportion</p>	<p>If two quantities are in direct proportion, as one increases, the other increases by the same percentage.</p> <p>If y is directly proportional to x, this can be written as $y \propto x$</p> <p>An equation of the form $y = kx$ represents direct proportion, where k is the constant of proportionality.</p>	
<p>2. Inverse Proportion</p>	<p>If two quantities are inversely proportional, as one increases, the other decreases by the same percentage.</p> <p>If y is inversely proportional to x, this can be written as $y \propto \frac{1}{x}$</p> <p>An equation of the form $y = \frac{k}{x}$ represents inverse proportion.</p>	
<p>3. Using proportionality formulae</p>	<p>Direct: $y = kx$ or $y \propto x$</p> <p>Inverse: $y = \frac{k}{x}$ or $y \propto \frac{1}{x}$</p> <ol style="list-style-type: none"> Solve to find k using the pair of values in the question. Rewrite the equation using the k you have just found. Substitute the other given value from the question in to the equation to find the missing value. 	<p>p is directly proportional to q. When $p = 12$, $q = 4$. Find p when $q = 20$.</p> <ol style="list-style-type: none"> $p = kq$ $12 = k \times 4$ so $k = 3$ $p = 3q$ $p = 3 \times 20 = 60$, so $p = 60$
<p>4. Direct Proportion with powers</p>	<p>Graphs showing direct proportion can be written in the form $y = kx^n$</p> <p>Direct proportion graphs will always start at the origin.</p>	<p style="text-align: center;">Direct Proportion Graphs</p> 
<p>5. Inverse Proportion with powers</p>	<p>Graphs showing inverse proportion can be written in the form $y = \frac{k}{x^n}$</p> <p>Inverse proportion graphs will never start at the origin.</p>	<p style="text-align: center;">Inverse Proportion Graphs</p> 