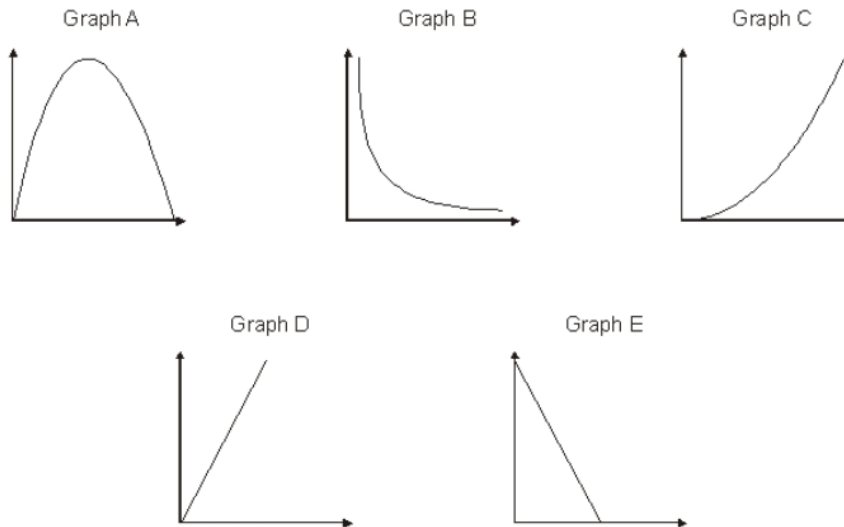


Problem of the Week: Week 5 (Sum2): Year 9: Algebra

- Find contextual approximate solutions to problems from the given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs

Which graph?

Here are the sketches of five different graphs.



Which graph best matches these relationships? Can you explain why?

- The circumference of a circle plotted against its diameter
- The area of a circle plotted against its radius
- The length of a rectangle of area 30cm^2 plotted against its width

Solution

- This refers to Graph D – as the circumference is directly proportional to the diameter (as the diameter increases so does the circumference, $\text{Circumference} = \pi d$)
- This refers to Graph C – it is an exponential graph because $\text{Area} = \pi r^2$
- This refers to Graph B – for the area to remain constant, as one side increases the other must decrease.