

Question 1:

A regular polygon has interior angles measuring 179° and has edges of length 2cm.
What is its perimeter?

Question 2:

What is the sum of the factors of 378?

Question 3:

What is the smallest five-digit number that is divisible by both 8 and by 9?

Question 4:

Three fair dice are rolled simultaneously. What is the probability that exactly two of the dice show a 6?

Question 5:

On a clock face, a line is drawn between 9 and 3 and another between 12 and 8. What is the acute angle between these two lines?

Question 6:

In the expression below, the letters A , B , C , D and E represent the numbers 1, 2, 3, 4, and 5 in some order.

$$A \times B + C \times D + E$$

What is the largest possible value of the expression?

Question 7:

Anine has four children of different ages, all under 10, and the product of their ages is 2016. What is the sum of their ages?

Question 8:

What is the smallest number N for which $\frac{2016}{N}$ is a perfect square?

Question 9:

Five people are sitting around a circle. Some are always telling the truth, whilst others always lie. Each person claims to be sitting between two liars. How many of them are telling the truth?

Question 10:

A packet of lollies contains 5 blue lollies, 15 yellow lollies and some red lollies. One-third of the lollies are red. What fraction of the lollies are yellow?

Question 11:

In a singles tennis tournament there are 10 players. The organiser need to arrange these 10 players into 5 pairs for the first round. In how many ways can this first round be drawn up?

Question 12:

The wheels on a truck travelling at 60 km/hr make 3 revolutions per second. What is the diameter of each wheel in metres?

Question 13:

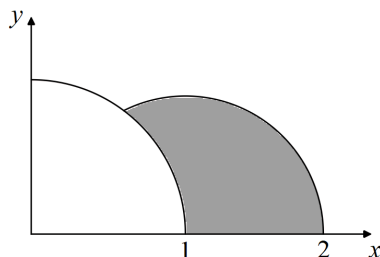
A student noticed that in a list of five integers, the mean, median and mode were consecutive integers in ascending order. What is the largest range possible for these five integers?

Question 1:

There is enough food in a pig pen to feed 14 pigs for 16 days.
For how many days should this amount feed 8 pigs?

Question 2:

The diagram shows two circles, each of radius 1 unit, and having its centre on the x -axis.
Find the shaded area?

**Question 3:**

Two missiles are initially 5,000km apart. They travel along a straight line directly towards one another, one travelling at 2,000km/hr and the other at 1,000km/hr.
How many kilometres are they apart one minute before impact?

Question 4:

If p is 50% of q and r is 40% of q , what percent is r of p ?

Question 5:

What is the value of n , if 1 minus the reciprocal of $(1-n)$ equals the reciprocal of $(1-n)$?

Question 6:

What is the mean of 7 numbers, if the mean of the first two is 9 and the mean of the last five is 16?

Question 7:

How many four-letter “words” are there with vowels in the middle two places and consonants in the other two, with no letter repeated?

Question 8:

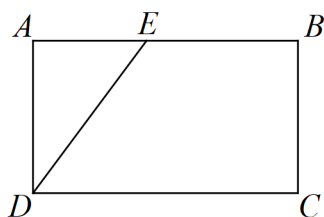
What is the value of x , if $2^{16^x} = 16^{2^x}$?

Question 9:

If $x \phi y$ is defined as $x \phi y = \frac{1/x + 1/y}{x + y}$, what value of $\frac{3 \phi 5}{5 \phi 7}$?

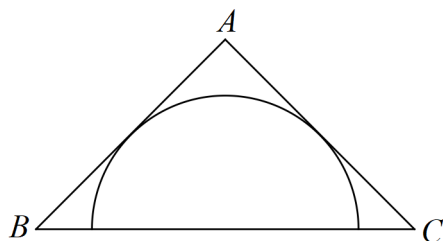
Question 10:

$ABCD$ is a rectangle with $DE = DC$. Given $AD = 5$ units and $BE = 3$ units, what is the length of DE ?



Question 11:

Find the area of a semicircle inscribed in triangle ABC , where $AB = AC = 25$ units and $BC = 40$ units.

**Question 12:**

The area of a circle circumscribed about a regular hexagon is 2π units².
What is the area of the hexagon?

Question 13:

Two candles have different lengths and thicknesses. The longer one can burn for 6 hours and the shorter one for 10 hours. After 4 hours of burning, both candles are the same length.
What fraction of the longer candle's length was the shorter candle's length?