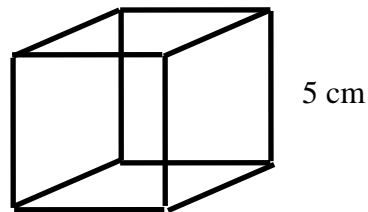


Thinking Mathematically – Length

Not Yet a Genius

1. What is the total length of steel rod needed to build this wire frame? The shape is a cube.



2. This is an old riddle. (Hint: It is pre-metric.) What is the longest word in the English language?

Near Genius

3. I can remember the value of pi to 5 decimal places by remembering the sentence, “I want a dirty lampshade”, since the number of letters in the words are 1, 4, 1, 5 and 9, which are the first 5 digits of pi. ($\pi = 3.14159\dots$)

Make up your own sentence to remember pi to 6 decimal places (3.141592....).

Can you do any better than that?

4. Memorise pi to 20 decimal places. Pi is approximately -
3 . 14159 26535 89793 23846 26433 83279 50288 41971 69399 37510

Most people think it is easiest to memorise large numbers by learning the digits in groups of 5.

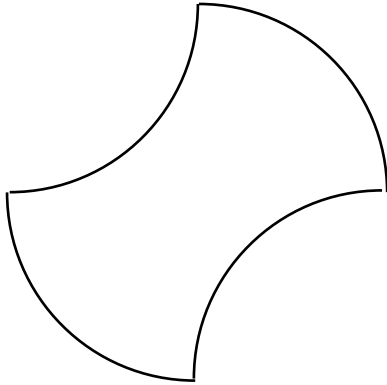
What is the current record for memorising digits of pi?

5. Light travels at 300 000 km per second. How far does it travel in:
 - a minute?
 - an hour?
 - a day?
 - a year? This last distance is called a light year. It is used to measure large distances.

Find the distance to the nearest star, measured in light years.

Genius

6. Light travels at 300,000 kilometres per second. The Sun is about 150 million kilometres from the Earth. How many minutes does it take the light from the Sun to reach the earth? Round your answer to the nearest minute.
7. Find the perimeter of this odd shape. (Hint - each of the sides is a quarter of a circle.)



Kilo-Genius

8. Estimate the total length of Highway One, which goes right around the edge of Australia. Explain how you estimated your answer.

Mega-Genius

9. The Boy Scouts decided to have a “money trail” to raise money for needy families. A money trail is simply a line of 5 cent pieces laid in a long row.

If the money trail was one kilometre long, how much money would be raised for needy families?

Giga-Genius

10. Rebecca says, "I can find the total length of the lines below by only making 4 measurements."

All line lengths are whole centimeters, eg 6 cm or 7 cm, but not 6.9 cm. Can you find the total length of the lines by making *fewer* than 4 measurements?

Explain how you were able to find the length by making as few measurements as possible.

