



**Walkthrough of Queensway
Secondary School Paper
(Approximation and Estimation,
Number patterns, Percentage,
Rate and Speed, Basic Geometry, Polygons)**

SI MATH



1. a) One of the top ten endangered species is the Asian elephant. It is estimated that there are 30 000 Asian elephants left in the wild, rounded off to 2 significant figures.

Write down the minimum and maximum number of Asian elephants that could be left in the wild.

Answer Minimum number = _____ [1]
Maximum number = _____ [1]

- b) The table shows the number of Asian elephants found in different countries of Southeast Asia. There is a total of 10655 Asian elephants.

Country	Number of Asian elephants	Percentage of Asian elephants (%)
Cambodia	250	2
Indonesia	2280	21
Laos	780	7
Malaysia	1250	12
Myanmar	3000	28
Thailand	3000	28
Vietnam	95	1

Explain why the percentage of Asian elephants sums to 99%, instead of 100%.

Answer _____

_____ [1]



2. A number sequence is shown below.

$$5, -3, -11, -19, \dots$$

a) Write down an expression, in terms of n , for the n^{th} term of this sequence.

Answer _____ [1]

b) Hence, find the 20th term of this sequence.

Answer _____ [1]

c) Explain whether -36 is a term in this sequence.

Answer _____

_____ [1]



3. A caterpillar that is 7 cm long crawls at a speed of 45 cm/s.

a) Convert 45 cm/s to m/min.

Answer_____m/min [2]

b) The caterpillar takes 0.8 s to crawl through a water pipe completely. Calculate the length of the water pipe.

Answer_____cm [2]



4. Bryan bought a skateboard at a price of \$185 from Ali. Ali made a loss of 5% from the sale of the skateboard.
- a) Calculate the cost price of the skateboard.

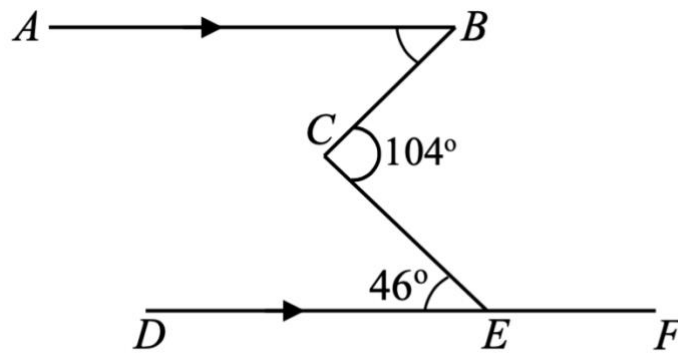
Answer \$_____ [2]

- b) Bryan decided to sell the skateboard after 1 year. How much must he sell in order to make a profit of 8%?

Answer \$_____ [2]



5. In the figure, AB is parallel to DF .



Jenny claimed that $\angle ABC = 180^\circ - 46^\circ$ due to interior angles.
By showing your workings with reasons, state whether you agree or disagree with her.

Answer

[3]



6. During a vacation, Mr Raj drove his car from Town *A* to Town *B* at an average speed of 75 km/h for 80 km. He continued his journey from Town *B* to Town *C* at an average speed of 55 km/h for 66 km.

- a) Calculate the time taken for the entire journey.
Give your answer in hours and minutes.

Answer _____ h _____ min [2]

- b) Find the average speed for its entire journey, giving your answer correct to 1 decimal place.

Answer _____ km/h [2]

- c) Convert your answer in part **b)** to m/s.

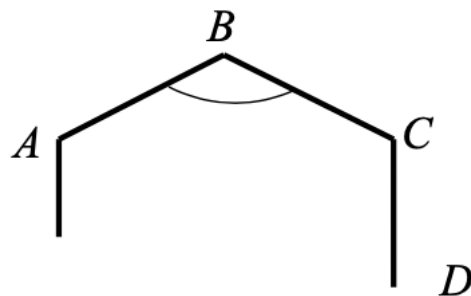
Answer _____ m/s [2]



7. a) Calculate the size of one interior angle of a regular pentagon.

Answer _____ ° [2]

b) The diagram shows part of a regular n -sided polygon $ABCD\dots$. The size of one interior angle to one exterior angle is in the ratio 2 : 1.



i) Calculate the angle ABC .

Answer _____ ° [2]



ii) Calculate the angle ACD .

Answer _____° [2]

iii) Find the value of n .

Answer $n =$ _____ [1]

END OF PAPER

