

# Estimating

32 min  
29 marks

1. Write 0.00578

(a) in standard form,

*Answer (a)* .....

[1]

(b) correct to 2 significant figures,

*Answer (b)* .....

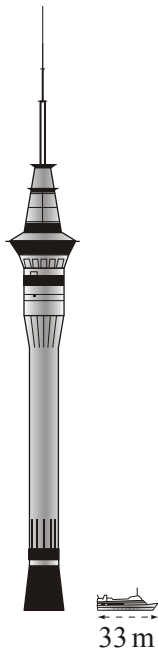
[1]

(c) correct to 2 decimal places.

*Answer (c)* .....

[1]

2.



The picture shows the Sky Tower in Auckland.  
Alongside the tower is a boat. The boat is 33 metres long.  
Use the length of the boat to estimate the height of the Sky Tower.

Answer .....m

[2]

3. (a) Write 0.48 correct to 1 significant figure.

Answer (a) .....

[1]

(b) (i) Find an approximate answer for the sum

$$9.87 - 5.79 \times 0.48$$

by rounding each number to 1 significant figure. Show your working.

Answer (b) (i) .....

[1]

- (ii) Use your calculator to find the exact answer for the sum in **part (b) (i)**.  
Write down all the figures on your calculator.

*Answer (b) (ii)* .....

[1]

4. Write the number 1045.2781 correct to

- (a) 2 decimal places,

*Answer (a)* .....

[1]

- (b) 2 significant figures.

*Answer (b)* .....

[1]

5.

$$p = \frac{0.002751 \times 3400}{(9.8923 + 24.7777)^2}.$$

- (a) In the spaces provided, write each number in this calculation correct to 1 significant figure.

*Answer (a)*  $\frac{\overline{\quad} \times \overline{\quad}}{(\overline{\quad} + \overline{\quad})^2}$

[1]

- (b) Use your answer to **part (a)** to **estimate** the value of  $p$ .

*Answer (b)* .....

[1]

6. Write 0.00656

(a) in standard form,

Answer (a) .....

[1]

(b) correct to 2 significant figures,

Answer (b) .....

[1]

(c) correct to 2 decimal places.

Answer (c) .....

[1]

7. The diameter of the sun is 1 392 530 kilometres.  
Write this value correct to 4 significant figures.

Answer ..... km

[1]

8. (a) (i) Write 15 583 correct to 2 significant figures.

Answer (a)(i) .....

[1]

(ii) Write your answer to **part (a)(i)** in standard form.

Answer (a)(ii) .....

[1]

(b) Write  $3.718 \times 10^{-3}$  as a decimal, correct to 4 decimal places.

Answer (b) .....

[2]

9. (a) (i) Write 17 598 correct to 2 significant figures.

Answer (a)(i) .....

[1]

- (ii) Write your answer to **part (a)(i)** in standard form.

Answer (a)(ii) .....

[1]

- (b) Write  $5.649 \times 10^{-2}$  as a decimal, correct to 3 decimal places.

Answer (b) .....

[2]

10.

$$\frac{8.95 - 3.05 \times 1.97}{2.92}$$

- (a) (i) Write the above expression with each number rounded to one significant figure.

Answer (a)(i) .....

[1]

- (ii) Use your answer to find an **estimate** for the value of the expression.

Answer (a)(ii) .....

[1]

- (b) Use your calculator to work out the value of the **original** expression.  
Give your answer correct to 2 decimal places.

Answer (b) .....

[1]

**11.** Work out  $43^3$ , giving

(a) your full calculator display,

*Answer (a)* .....

**[1]**

(b) your answer correct to the nearest thousand.

*Answer (b)* .....

**[1]**