

(i) Significant Figures

1. State the number of significant figures for each of the following
   (a) 123 (b) 1200 (c) 015 (d) 18001 (e) 12.4 (f)0.052 (g) 12.0 (h) 0.0480 (i) 0.10400
2. Write the following numbers correct to one significant figure.
   (a) 7682 [1] (b) 0.07682 [1]
3. Write 0.046875 correct to 2 significant figures. [1]
4. Write 0.07164 correct to 2 significant figures. [1]
5. Write 168.9 correct to 2 significant figure [1]
6. Write 569000 correct to 2 significant figures.[1]
7. Write 0.047883 correct to 2 significant figures. [1]
8. Write these numbers correct to 2 significant figures.
   (a) 0.076499 [1] (b) 10 100 [1]
9. Write 71496 correct to 2 significant figures [1]
10. Write 0.040 190 7 correct to 3 significant figures, [1]
11. Write 4123 correct to 3 significant figures. [1]
12. Write 23.4571 correct to 4 significant figures,[1]
13. Write 3.5897 correct to 4 significant figures [1]
14. A lake has an area of 63 800000 000 square metres. Write this area in square kilometres, correct to 2 significant fig [2]

Anwers:

1) (a) 3 (b) 2 (c) 2 (d) 5 (e) 3 (f) 2 (g) 3 (h) 3 (i) 5
2) (a)8000 (b)0.08 3) 0.047 4) 0.072 5) 170 6) 570000 7) 0.048 8) (a)0.076 (b) 10000
9) 71000 10) 0.0402 11) 4120 12) 23.46 13) 3.590 14) 64000

(ii) Decimal Place

1. Write 1.8972 correct to 2 decimal places. [1]
2. Write 0.040 190 7 correct to 3 decimal places. [1]
3. Write 15.0782 correct to one decimal place, [1]
4. 0.983 correct to 1 decimal place, [1]

Answers

1) 1.90 2) 0.040 3) 15.1 4)1.0

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(iii) Nearest 10 ,100 and 1000

1. Write 15.0782 correct to the nearest 10. [1]
2. Write 23.4571 correct to the nearest 10 [1]
3. Write 692 correct to the nearest 10 [1]
4. Write 8847 correct to the nearest 10 [1]
5. Write 997 correct to the nearest 10 [1]
6. Write 4 correct to the nearest 10 [1]
7. Write 78540 correct to the nearest 100 [1]
8. Write 8084 correct to the nearest 100 [1]
9. Write 950 correct to the nearest 100 [1]
10. Write 2984 correct to the nearest 100 [1]
11. Write 209802 correct to the nearest thousand. [1]
12. Write 14 835 correct to the nearest thousand.[1]

Answers

1) 20 2) 20) 3) 690 4) 8850 5) 1000 6) 0 7) 78500 8) 8100 9) 1000 10) 3000
11) 210000 12) 15000

(iv) Estimation

1. a) Express correct to **two** significant figures,
   i) 386.71 [1]
   ii) 0.02049 [1]
   b) **Hence** estimate correct to one significant figure the value of 386.71 x 0.02049 [1]

2. Complete the statements
   a) 4872 correct to 1 significant figure is …… [1]
   b) 4872 correct to …… significant figures is 4870 [1]

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3. Estimate the value of the following

a)$\sqrt{26}$ b) $\sqrt{50}$ c) $\sqrt{62}$ d) $\sqrt{99}$ e)$\sqrt{2600}$ f) $\sqrt{5000}$ g) $\sqrt{6200}$ h)$\sqrt{9800}$

4. Estimate the value, correct to one significant figure of $\frac{4.03^2 \times 29.88}{\sqrt{150}}$ [2]

5. By writing each number correct to 1 significant figure, estimate the value of $\frac{48.9 \times 0.207^2}{3.94}$ [2]

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6. a)Express correct to two significant figures,
   i) 15823.769 [1]
   ii) 0.0030489 [1]
   b) Hence estimate correct to one significant figure the value of 15823.769 x 0.0030489 [2]

7. a) Correct to 6 decimal places, $\sqrt{10}$ = 3.162278 , $3\frac{1}{6}$ = 3.166667
   Find the difference between $3\frac{1}{6}$ and $\sqrt{10}$
   Give your answer correct to 2 significant figures. [1]
   b)Estimate correct to the nearest whole number the value of $\sqrt{2.9862^2 + 4.002^2}$ [1]

8. By writing each number correct to one significant figure, estimate the value of $\frac{29.3^2}{2.04 \times 0.874}$ [2]

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9. By writing each number correct to one significant figure, estimate the value of $\frac{28.6+47.7}{0.47 \times 21.4}$ [2]

10. a) Write 405917628 correct to three significant figures [1]

    b) By writing each number correct to one significant figure, estimate the value of

    $\frac{41.3}{9.79 \times 0.765}$ [1]

11. a)Write the value of 1234.567, correct to 2 significant figures [1]

    b) Write down the estimate for $\sqrt{\frac{28}{\pi}}$ [1]

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12. Estimate correct to the nearest whole number the value of $\frac{\sqrt[3]{67}}{1.03}$ [1]

13. By writing each number correct to 1 significant figure, estimate the value of $\frac{29.2 \times 8.17}{0.396}$ [2]

14. By making suitable approximations, estimate the value of $\frac{\sqrt{3.98} \times 602.3}{2.987}$

    Show clearly the approximations you use. [2]

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15. (a) Write the number 0.050 462 correct to 3 significant figures. [1]

    (b) By writing each number correct to 1 significant figure, estimate the value of $\frac{8.94 \times 0.201}{28.8}$ [1]

Answers:

Q1) a)i)390 ii)0.020 b)7.8 Q2) a) 5000 b)3 Q3)a) 5 b)7 c)8 d)10 e)50 f)70 g)80 h)100 Q4)40 Q5)1/2 Q6)a)i)16000 ii)0.0030 b)50 Q7)a)0.0044 b)5 Q8)500 Q9)7.7 Q10)a)406000000 b)5 Q11) a)1200 b) 3 Q12) 4 Q13)600 Q14)400 Q15)a)0.0505 b)0.06

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