



## Working with Numbers - Questions

Q1) Perform these calculations answering correct to i) 1 D.P. ii) 2 D.P.

a)  $6.12 \times 7.54$

b)  $67.2 \div 101.45$

Q2) Perform these calculations answering correct to i) 1 S.F. ii) 2 S.F.

a)  $78.2 \times 12.8$

b)  $124 \div 65300$

Q3) Write the following using scientific notation.

a) 4230000

b) 0.00213

Q4) Calculate and express your answer using scientific notation.

a)  $(4.1 \times 10^5) \times (3 \times 10^2)$

b)  $(3.5 \times 10^{-2}) \div (4.5 \times 10^3)$

Q5) Simplify the following.

a)  $\sqrt{27}$

b)  $\sqrt{12}$

c)  $\sqrt{48}$

d)  $\sqrt{80}$

e)  $2\sqrt{8}$

f)  $2\sqrt{28}$

Q6) Simplify the following expressions.

a)  $\sqrt{8} - 2\sqrt{12}$

b)  $\sqrt{27} + \sqrt{12}$

c)  $\sqrt{40} + 4\sqrt{10} + \sqrt{90}$

d)  $\sqrt{27} \times \sqrt{3}$

e)  $\sqrt{20} + 2\sqrt{45} - \sqrt{80}$

f)  $\sqrt{16} \times \sqrt{3}$

Q7) Write the following fractions with a rational denominator.

a)  $\frac{2}{\sqrt{3}}$

b)  $\frac{3}{4\sqrt{3}}$

c)  $\frac{\sqrt{12}}{\sqrt{3}}$

d)  $\frac{\sqrt{5}}{\sqrt{20}}$

Q8) Use the rules of indices to evaluate the following.

a)  $a^3 \times a^2$

b)  $a^0 \div a^{-2}$

c)  $(b^2)^3$

d)  $a^2 \times a^3 \div a^{-5}$

e)  $(3a)^2$

f)  $(2m^3)^2$

Q9) Evaluate the following.

a)  $8^{\frac{1}{3}}$

b)  $27^{\frac{2}{3}}$

c)  $16^{-\frac{1}{4}}$

d)  $4^{-\frac{3}{2}}$

e)  $25^{-\frac{3}{2}}$



## Working with Numbers - Solutions

Q1) a) i) 46.1 to 1 decimal place

ii) 46.14 to 2 decimal places

b) i) 0.7 to 1 decimal place

ii) 0.66 to 2 decimal places

Q2) a) i) 1,000 to 1 significant figure

ii) 1,000 to 2 significant figures

b) i) 0.002 to 1 significant figure

ii) 0.0019 to 2 significant figures

Q3) a)  $42.3 \times 10^5$

b)  $2.13 \times 10^{-3}$

Q4) a)  $1.23 \times 10^8$

b)  $7.78 \times 10^{-6}$

Q5) a)  $3\sqrt{3}$

b)  $2\sqrt{3}$

c)  $4\sqrt{3}$

d)  $4\sqrt{5}$

e)  $4\sqrt{2}$

f)  $4\sqrt{7}$

Q6) a)  $-2\sqrt{3}$

b)  $5\sqrt{3}$

c)  $9\sqrt{10}$

d)  $4\sqrt{5}$

e) 9

f)  $4\sqrt{3}$

Q7) a)  $\frac{2\sqrt{3}}{3}$

b)  $\frac{3\sqrt{3}}{12}$

c)  $\frac{4\sqrt{3}}{3}$

d)  $\frac{1}{2}$

Q8) a)  $a^5$

b)  $a^{-2}$

c)  $b^6$

d)  $a^0$

e)  $9a^2$

f)  $4m^6$

Q9) a) 2

b) 9

c)  $\frac{1}{2}$

d)  $\frac{1}{8}$

e)  $\frac{1}{125}$