



Working with Numbers - Questions

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

a) 6.12×7.54

b) $67.2 \div 101.45$

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

a) 78.2×12.8

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) $\sqrt{8} - 2\sqrt{18}$

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) 4.23×10^5

b) 2.13×10^{-3}

Q4) a) 1.23×10^8

b) 7.78×10^{-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) $-4\sqrt{2}$

b) $5\sqrt{3}$

c) $9\sqrt{10}$

d) 9

e) 9

f) $4\sqrt{3}$

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

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

c) 2

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) $\frac{1}{125}$