CHAPTER 1
Basic arithmetic and the calculator

EXCEL YEAR 8 MATHEMATICS
Ch. 1.1–1.4, 13.5,
p. 1–4, 212

Addition and subtraction

QUESTION 1 Use your calculator to find the following.

a $24 + 30 + 29 =$ _____ b $36 + 20 + 81 =$ _____ c $86 + 24 + 68 =$ _____

d $64 + 85 + 68 =$ _____ e $120 + 38 + 69 =$ _____ f $83 + 94 + 468 =$ _____

g $83.134 + 34.238 =$ _____ h $65.36 + 93.89 =$ _____ i $58.935 + 102.6 =$ _____

j $36.59 + 9.36 =$ _____ k $32.59 + 120.36 =$ _____ l $89.69 + 102.57 =$ _____

QUESTION 2 Use your calculator to find the answer.

a $82.7 + 93.25 =$ _____ b $63.15 + 69.65 =$ _____ c $19.63 + 265.69 =$ _____

d $10.36 + 43.75 =$ _____ e $293.6 + 132.8 =$ _____ f $125.7 + 89.3 =$ _____

g $216.7 + 38.7 =$ _____ h $89.6 + 21.7 =$ _____ i $36.7 + 81.5 =$ _____

j $512.9 + 41.3 =$ _____ k $91.9 + 31.5 =$ _____ l $93.5 + 31.9 =$ _____

QUESTION 3 Use your calculator to work out the following.

a $\frac{1}{3}+\frac{1}{4} =$ _____ b $\frac{3}{7}+\frac{9}{14} =$ _____ c $\frac{2}{3}+\frac{9}{8} =$ _____

d $2\frac{3}{4}+1\frac{8}{9} =$ _____ e $5\frac{1}{6}+2\frac{2}{3} =$ _____ f $9\frac{2}{5}+3\frac{3}{5} =$ _____

QUESTION 4 Use your calculator to find the following.

a $56 - 21 =$ _____ b $38 - 19 =$ _____ c $215 - 164 =$ _____

d $563 - 219 =$ _____ e $6231 - 3254 =$ _____ f $861 - 436 =$ _____

g $58.653 - 31.1 =$ _____ h $86.73 - 36.95 =$ _____ i $89.61 - 30.66 =$ _____

j $81.7 - 63.9 =$ _____ k $524.1 - 30.8 =$ _____ l $938.7 - 53.9 =$ _____

QUESTION 5 Use your calculator to find the answer.

a $59.36 - 38.9 =$ _____ b $59.8 - 53.889 =$ _____ c $63.7 - 38.615 =$ _____

d $119.38 - 21.9 =$ _____ e $36.6 - 22.87 =$ _____ f $80.8 - 72.9 =$ _____

g $81.3 - 36.67 =$ _____ h $53.715 - 39.125 =$ _____ i $53.7 - 42.9 =$ _____

j $72.5 - 31.8 =$ _____ k $817.3 - 215.5 =$ _____ l $93.6 - 49.8 =$ _____

QUESTION 6 Use your calculator to work out the following.

a $\frac{7}{9}-\frac{2}{9} =$ _____ b $\frac{6}{17}-\frac{2}{17} =$ _____ c $\frac{5}{13}-\frac{1}{13} =$ _____

d $\frac{9}{10}-\frac{4}{5} =$ _____ e $\frac{3}{7}-\frac{2}{3} =$ _____ f $\frac{8}{9}-\frac{2}{3} =$ _____

g $6\frac{7}{9}-4\frac{3}{4} =$ _____ h $18\frac{5}{8}-3\frac{2}{5} =$ _____ i $6\frac{3}{7}-4\frac{2}{3} =$ _____

Basic arithmetic and the calculator

Approximation and rounding off

QUESTION 1 Round off the following numbers to the nearest hundred.

a 56 = _____ b 8342 = _____ c 961 = _____

d 637 = _____ e 83 = _____ f 93 = _____

g 935 = _____ h 251 = _____ i 831 = _____

j 6439 = _____ k 6132 = _____ l 8538 = _____

QUESTION 2 Round off the following numbers to the nearest thousand.

a 8629 = _____ b 953 = _____ c 2364 = _____

d 5134 = _____ e 8309 = _____ f 9837 = _____

g 9635 = _____ h 563 = _____ i 5631 = _____

j 6112 = _____ k 998 = _____ l 8331 = _____

QUESTION 3 Write the following decimals correct to two decimal places.

a 8.315 = _____ b 0.931 = _____ c 72.364 = _____

d 92.612 = _____ e 0.2156 = _____ f 65.123 = _____

g 53.8135 = _____ h 36.213 = _____ i 92.987 = _____

j 98.311 = _____ k 48.115 = _____ l 63.125 = _____

QUESTION 4 Write the following decimals correct to one decimal place.

a 1.78 = _____ b 9.36 = _____ c 15.125 = _____

d 39.18 = _____ e 63.149 = _____ f 83.256 = _____

g 93.876 = _____ h 58.234 = _____ i 96.156 = _____

j 51.381 = _____ k 68.876 = _____ l 52.963 = _____

QUESTION 5 Express the following correct to 2 significant figures.

a 92.31 = _____ b 365 = _____ c 5839 = _____

d 6638 = _____ e 9389 = _____ f 56.78 = _____

g 913.68 = _____ h 512.64 = _____ i 916.86 = _____

j 1925.125 = _____ k 832.051 = _____ l 913.186 = _____

QUESTION 6 Express the following correct to 3 significant figures.

a 9364 = _____ b 5689 = _____ c 81 320 = _____

d 56.125 = _____ e 83.817 = _____ f 98.659 = _____

g 67.838 = _____ h 915.87 = _____ i 86.345 = _____

j 109.862 = _____ k 72.63 = _____ l 981.834 = _____

Basic arithmetic and the calculator

Squares, cubes and powers

QUESTION 1 Use the x^2 key to evaluate the following.

a $(3)^2 =$ _____ b $(7)^2 =$ _____ c $(9)^2 =$ _____

d $(5)^2 =$ _____ e $(11)^2 =$ _____ f $(13)^2 =$ _____

g $(41)^2 =$ _____ h $(48)^2 =$ _____ i $(63)^2 =$ _____

j $(58)^2 =$ _____ k $(1.7)^2 =$ _____ l $(91.3)^2 =$ _____

QUESTION 2 Use the x^y key to evaluate the following.

a $2^3 =$ _____ b $5^3 =$ _____ c $8^3 =$ _____

d $21^3 =$ _____ e $68^3 =$ _____ f $72^3 =$ _____

g $4^5 =$ _____ h $6^4 =$ _____ i $18^2 =$ _____

j $2^8 =$ _____ k $3^6 =$ _____ l $(2.5)^4 =$ _____

QUESTION 3 Answer the following.

a $(2.1)^3 =$ _____ b $(8.7)^2 =$ _____ c $(9.5)^3 =$ _____

d $(10.4)^4 =$ _____ e $(6.9)^3 =$ _____ f $(18.3)^4 =$ _____

g $(225)^2 =$ _____ h $(63.5)^2 =$ _____ i $(2.1)^6 =$ _____

j $(71.5)^2 =$ _____ k $(18.5)^3 =$ _____ l $(61.4)^2 =$ _____

QUESTION 4 Calculate the following correct to 1 decimal place.

a $(2.51)^2 =$ _____ b $(1.2)^4 =$ _____ c $(8.2)^4 =$ _____

d $(8.64)^2 =$ _____ e $(8.1)^2 =$ _____ f $(16.1)^3 =$ _____

g $(9.1)^3 =$ _____ h $(19.5)^2 =$ _____ i $(5.2)^4 =$ _____

j $(3.6)^3 =$ _____ k $(7.6)^4 =$ _____ l $(2.3)^5 =$ _____

QUESTION 5 Evaluate the following, leaving your answers in fraction form.

a $\left(2\frac{1}{2}\right)^2 =$ _____ b $\left(\frac{1}{3}\right)^3 =$ _____ c $\left(1\frac{3}{4}\right)^2 =$ _____

d $\left(4\frac{1}{3}\right)^2 =$ _____ e $\left(5\frac{3}{4}\right)^3 =$ _____ f $\left(7\frac{1}{2}\right)^4 =$ _____

g $\left(2\frac{1}{3}\right)^3 =$ _____ h $\left(3\frac{3}{5}\right)^2 =$ _____ i $\left(5\frac{5}{6}\right)^2 =$ _____

j $\left(2\frac{1}{4}\right)^3 =$ _____ k $\left(3\frac{3}{4}\right)^3 =$ _____ l $\left(4\frac{1}{4}\right)^2 =$ _____

Basic arithmetic and the calculator

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Problem solving and the calculator

1 Find the cost of 55 litres of petrol if 1 litre costs 85.9 cents. _____

2 Find $\frac{2}{9}$ of 15.8 metres. _____

3 Find the area of a square of side 8.25 m. _____

4 Calculate the volume of a cube of side 3.5 cm. _____

5 How much would 48 books cost if 3 books cost $25.35? _____

6 Find the cost of 25 calculators at $48.95 each. _____

7 Divide $1019.20 equally among 28 people. _____

8 Find the average of 3.5, 8.75, 6.95, 15.6 and 11.25 _____

9 Find the volume of a rectangular prism with sides 9 cm, 15.6 cm and 18.9 cm. _____

10 Find the length of each side of a cube that has a volume of 24 389 cm^3. _____

11 Find the sum of 25.6, 18.35, 46.286 and then subtract 19.256 _____

12 Find the square root of $12\frac{1}{4}$ _____

13 Find the cube root of 27.8 correct to 2 decimal places. _____

14 Find the cost of 8.956 kg of cheese at $6.90 a kilogram. _____

15 How many $8.95 books can be bought for $187.995? _____

Marks

11 $25 \times 10^3 =$

Ⓐ 25 000 Ⓑ 20 000 Ⓒ 24 000 Ⓓ 50 000 — 1

12 $\frac{1}{7} \times \frac{1}{7} =$

Ⓐ $\frac{1}{49}$ Ⓑ $\frac{1}{7}$ Ⓒ $\frac{2}{7}$ Ⓓ $\frac{1}{14}$ — 1

13 The number three hundred thirty thousand and three may be written as

Ⓐ 300 303 Ⓑ 303 003 Ⓒ 330 003 Ⓓ 3 300 003 — 1

14 $3 \times 3 \times 3 - 3 \times 3$ simplifies to

Ⓐ 9 Ⓑ 15 Ⓒ 18 Ⓓ 27 — 1

15 147.65831 correct to two decimal places is

Ⓐ 140.00 Ⓑ 147.65 Ⓒ 147.66 Ⓓ 150.65 — 1

Total marks achieved for PART A ___/15

TOPIC TEST — PART C

Instructions
- This part consists of 4 questions
- Each question is worth 5 marks
- Show all necessary working

Time allowed: 20 minutes **Total marks = 20**

Marks

1 Write the number 285.76538 correct to

a 3 decimal places _____ b 3 significant figures _____

c 2 decimal places _____ d 2 significant figures _____

e 1 decimal place _____

5

2 Evaluate correct to 2 decimal places.

a 29.5×25.3 _____ b $\dfrac{68.9}{5.6+3.5}$ _____

c $\dfrac{81.7}{12.83 \times 0.89}$ _____ d $(9.6)^2 \times \sqrt{31.5}$ _____

e $\dfrac{1.63+3.98}{0.78-0.53}$ _____

5

3 Evaluate correct to 3 decimal places.

a $\sqrt{(5.6)^2+(8.2)^2}$ _____ b $\dfrac{8.9}{0.5}+\dfrac{2.73}{0.02}$ _____

c $(3.6)^4+(2.5)^2$ _____ d $\sqrt{19 \times 32}$ _____

e $0.83 \times (3.15)^2$ _____

5

4 Evaluate correct to 3 significant figures.

a $(8.5)^2+2.5 \times 1.2$ _____ b $(3.8)^2-(4.3)^2$ _____

c $7.8 \div \sqrt{21.6}$ _____ d $48.5 \div (1.3^2+21.7)$ _____

e $\sqrt{(6.3)^3}$ _____

5

Total marks achieved for PART C /20