SKILLSHEET

Mental percentages

Finding 10% of a number

Finding 10% or $\frac{1}{10}$ of a number is the same as dividing that number by 10. To find 10% of a number, we move the decimal point one place to the left.

Example 1

Find:

a 10% of 850 **b** 10% of 1756 **c** 10% of 34

Solution

a 10% of 850 = 850 ÷ 10 = 85.0 = 85

b 10% of 1756 = 1756 ÷ 10 = 175.6 = 175.6

c 10% of 34 = 34 ÷ 10 = 3.4 = 3.4

Finding 5% of a number

Since 5% is half of 10%, to find 5% we divide the number by 10, then find half of it. To find 5% of a number, we move the decimal point one place to the left, then divide by 2.

Example 2

Find:

a 5% of 360 **b** 5% of $22 **c** 5% of 70

Solution

a 10% of 360 = 36
So 5% of 360 = 36 ÷ 2 = 18

b 10% of $22 = $2.20
So 5% of $22 = $2.20 ÷ 2 = $1.10

c 10% of 70 = 7
So 5% of 70 = 7 ÷ 2 = 3.5

Exercise

1 Find the following percentages without using a calculator.

a $10\% \times 24$ **b** $10\% \times 212$ **c** $10\% \times \$549$ **d** $10\% \times \$45$

e $5\% \times 880$ **f** $5\% \times 104$ **g** $5\% \times \$41$ **h** $10\% \times \$260$

i $10\% \times 1925$ **j** $5\% \times 270$ **k** $5\% \times \$64$ **l** $5\% \times \$182$

Finding $2\frac{1}{2}\%$ of a number

Since $2\frac{1}{2}\%$ is half of 5%, to find $2\frac{1}{2}\%$ we find 5% of the number, then find half of it. So, to find $2\frac{1}{2}\%$ of a number, we move the decimal point one place to the left, then divide by 2, then divide by 2 again.

Example 3

Find:

a $2\frac{1}{2}\%$ of 160 **b** $2\frac{1}{2}\%$ of \$86 **c** $2\frac{1}{2}\%$ of 548

Solution

a 10% of $160 = 16$

So $5\% = 16 \div 2 = 8$

So $2\frac{1}{2}\% = 8 \div 2 = 4$

$2\frac{1}{2}\% \times 160 = 4$

b 10% of $\$86 = \$8.60$

So $5\% = \$8.60 \div 2 = \$4.30$

So $2\frac{1}{2}\% = \$4.30 \div 2 = \$2.15$

$2\frac{1}{2}\% \times \$86 = \$2.15$

c 10% of $548 = 54.8$

So $5\% = 54.8 \div 2 = 27.4$

So $2\frac{1}{2}\% = 27.4 \div 2 = 13.7$

$2\frac{1}{2}\% \times 548 = 13.7$

Finding 20% of a number

Since 20% is twice 10%, to find 20% we find 10% of the number, then double it. So, to find 20% of a number, move the decimal point one place to the left, then double the result.

Example 4

Find:

a 20% of 45 **b** 20% of \$128 **c** 20% of 300

Solution

a 10% of $45 = 4.5$
So 20% of $45 = 4.5 \times 2 = 9$

b 10% of $\$128 = \$12.80$
So 20% of $\$128 = \$12.80 \times 2 = \$25.60$

c 10% of 300 = 30
So 20% of 300 = 30 × 2 = 60

Exercise

2 Find the following percentages without using a calculator.

a $2\frac{1}{2}\% \times 200$ **b** $2\frac{1}{2}\% \times 480$ **c** $2\frac{1}{2}\% \times \$184$ **d** $2\frac{1}{2}\% \times \$660$

e $20\% \times 720$ **f** $20\% \times 25$ **g** $20\% \times \$545$ **h** $20\% \times \$390$

i $2\frac{1}{2}\% \times 250$ **j** $20\% \times 134$ **k** $2\frac{1}{2}\% \times \$120$ **l** $2\frac{1}{2}\% \times \$56$

Finding 50% of a number

Finding 50% or $\frac{1}{2}$ of a number is the same as dividing that number by 2.

Example 5

Find:

a 50% of 74 **b** 50% of $245

Solution

a 50% of 74 = 74 ÷ 2 = 37

b 50% of $245 = $245 ÷ 2 = $122.50

Finding 25% of a number

Finding 25% or $\frac{1}{4}$ of a number is the same as dividing that number by 4. To find 25% of a number, we divide by 2 (to get 50%), then divide by 2 again.

Example 6

Find:

a 25% of 850 **b** 25% of $133

Solution

a 50% of 850 = 850 ÷ 2 = 425
25% of 850 = 425 ÷ 2 = 212.5

b 50% of $133 = $133 ÷ 2 = $66.50
25% of $133 = $66.50 ÷ 2 = $33.25

Exercise

3 Find the following percentages without using a calculator.

a $50\% \times 70$ **b** $50\% \times 45$ **c** $25\% \times 144$ **d** $25\% \times 22$

e $25\% \times \$62$ **f** $50\% \times \$27$ **g** $25\% \times 108$ **h** $50\% \times 17$

i $50\% \times \$24.50$ **j** $25\% \times \$680$ **k** $25\% \times \$96$ **l** $50\% \times \$185$

Answers

1	**a** 2.4	**b** 21.2	**c** $54.90	**d** $4.50
	e 44	**f** 5.2	**g** $2.05	**h** $26
	i $192.5	**j** 13.5	**k** $3.20	**l** $9.10
2	**a** 5	**b** 12	**c** $4.60	**d** $16.50
	e 144	**f** 5	**g** $109	**h** $78
	i 6.25	**j** 26.8	**k** $3	**l** $1.40
3	**a** 35	**b** 22.5	**c** 36	**d** 5.5
	e $15.50	**f** $13.50	**g** 27	**h** 8.5
	i $12.25	**j** $170	**k** $24	**l** $92.50