

## Mental Computation – Multiplying by small numbers

### Problem

Solve  $78 \times 2$  mentally in as many different ways as you can.

### Solution

Often it is easier to solve TWO easy questions than ONE hard question.

Often there is more than one way to think about a mental computation.

THINK:

$$\begin{array}{rcl} 78 & = & 70 + 8 \\ 70 \times 2 & = & 140 \quad \{\text{remember 140}\} \\ 8 \times 2 & = & 16 \\ 140 + 16 & = & 156 \end{array}$$

OR

$$\begin{array}{rcl} 78 & = & 80 - 2 \\ 80 \times 2 & = & 160 \quad \{\text{remember 160}\} \\ 2 \times 2 & = & 4 \\ 160 - 4 & = & 156 \end{array}$$

OR

$$\begin{array}{rcl} 78 & = & 75 + 3 \\ 75 \times 2 & = & 150 \quad \{\text{remember 150}\} \\ 3 \times 2 & = & 6 \\ 150 + 6 & = & 156 \end{array}$$

## Mental Computation – Dividing By Small Numbers

### Problem

Solve  $78 \div 2$  mentally in as many different ways as you can.

### Solution

Often it is easier to solve TWO easy questions than ONE hard question.

Often there is more than one way to think about a mental computation.

THINK:

$$\begin{array}{rcl} 78 & = & 70 + 8 \\ 78 \div 2 & = & (70 \div 2) + (8 \div 2) \\ & = & 35 + 4 = 39 \end{array}$$

OR

$$\begin{array}{rcl} 78 & = & 60 + 18 \\ 78 \div 2 & = & (60 \div 2) + (18 \div 2) \\ & = & 30 + 9 = 39 \end{array}$$

OR

$$\begin{aligned}78 &= 80 - 2 \\78 \div 2 &= (80 \div 2) - (2 \div 2) \\ &= 40 - 1 = 39\end{aligned}$$

**Problem**

Solve  $78 \div 3$  mentally in as many different ways as you can.

**Solution**

THINK:

$$\begin{aligned}78 &= 70 + 8 \\ &(70 \div 3)\end{aligned}$$

Nope, doesn't go ☹

TRY:

$$\begin{aligned}78 &= 60 + 18 \\ (60 \div 3) &= 20 \\ 18 \div 3 &= 6 \\ 20 + 6 &= 26\end{aligned}$$

{remember 20}

TRY:

$$\begin{aligned}78 &= 75 + 3 \\ 75 \div 3 &= 25 \\ 3 \div 3 &= 1 \\ 25 + 1 &= 26\end{aligned}$$

{remember 25}