



DIVISION STRATEGIES

MENTAL AND WRITTEN

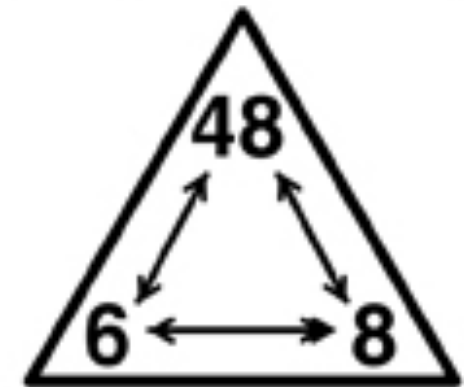
MENTAL DIVISION STRATEGIES – USE MULTIPLICATION FACTS KNOWING YOUR FACT FAMILY IS HELPFUL

WARM UP FACT FAMILY TRIANGLES

Multiplication & Division Fact Families

The Commutative Property

$$6 \times 8 = 48$$



X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

$$6 \times 8 = 48$$

$$8 \times 6 = 48$$

$$48 \div 6 = 8$$

$$48 \div 8 = 6$$

1 Divide the following numbers by 10, 100 and 1 000:

a

T Th	Th	H	T	U
4	5	0	0	0

$\div 10$
 $\div 100$
 $\div 1\ 000$

b

T Th	Th	H	T	U
4	3	0	0	0

$\div 10$
 $\div 100$
 $\div 1\ 000$

c

T Th	Th	H	T	U
8	5	0	0	0

$\div 10$
 $\div 100$
 $\div 1\ 000$

d

T Th	Th	H	T	U
8	8	0	0	0

$\div 10$
 $\div 100$
 $\div 1\ 000$

MENTAL DIVISION STRATEGIES – DIVIDE BY 10'S, 100'S AND 1000'S

When the two numbers seem too large to work with in our heads, we can halve them till we get to a division fact we recognise. Both numbers must be even for this to work.

$$126 \div 14$$

$$(\text{half } 126) \div (\text{half } 14)$$

$$63 \div 7 = 9$$

MENTAL DIVISION STRATEGIES – HALVING STRATEGY

Halve each number to get to a recognisable division fact. The first one has been done for you.

a $112 \div 14$ $\frac{56}{\quad} \div \frac{7}{\quad} = \boxed{8}$

b $144 \div 16$ $\frac{\quad}{\quad} \div \frac{\quad}{\quad} = \boxed{\quad}$

c $96 \div 12$ $\frac{\quad}{\quad} \div \frac{\quad}{\quad} = \boxed{\quad}$

d $220 \div 4$ $\frac{\quad}{\quad} \div \frac{\quad}{\quad} = \boxed{\quad}$

e $162 \div 18$ $\frac{\quad}{\quad} \div \frac{\quad}{\quad} = \boxed{\quad}$

MENTAL DIVISION STRATEGIES – HALVING STRATEGY

Keep halving until you get to a fact you can work with. If you can do it in your head, just fill in the last box. Otherwise, use the lines to help you.

a $216 \div 36 =$ _____ \div _____ $=$ _____ \div _____ $=$

b $196 \div 28 =$ _____ \div _____ $=$ _____ \div _____ $=$

c $224 \div 32 =$ _____ \div _____ $=$ _____ \div _____ $=$

d $168 \div 24 =$ _____ \div _____ $=$ _____ \div _____ $=$

MENTAL DIVISION STRATEGIES – HALVING STRATEGY

Mental division strategies – split strategy

Division problems also become easier if you split the number to be divided into recognisable facts.

Look at the problem $144 \div 9$

Can we divide 144 into 2 multiples of 9?

We can divide it into 54 and 90. These are both easily divided by 9. Then we add the two answers together.

$$\begin{array}{r} 144 \div 9 \\ \swarrow \quad \searrow \\ \underline{90} \quad \underline{54} \\ \div 9 \quad \div 9 \\ \underline{10} + \underline{6} = 16 \end{array}$$

MENTAL DIVISION STRATEGIES – HALVING STRATEGY

1 Use the split strategy to divide these numbers. Use the clues to guide you:

a

$$\begin{array}{r} 112 \div 8 \\ \swarrow \quad \searrow \\ \underline{80} \quad \underline{32} \\ \div 8 \quad \div 8 \\ \underline{\quad} + \underline{\quad} = \boxed{\quad} \end{array}$$

b

$$\begin{array}{r} 85 \div 5 \\ \swarrow \quad \searrow \\ \underline{50} \quad \underline{\quad} \\ \div 5 \quad \div 5 \\ \underline{\quad} + \underline{7} = \boxed{\quad} \end{array}$$

c

$$\begin{array}{r} 78 \div 6 \\ \swarrow \quad \searrow \\ \underline{\quad} \quad \underline{18} \\ \div 6 \quad \div 6 \\ \underline{10} + \underline{\quad} = \boxed{\quad} \end{array}$$

d

$$\begin{array}{r} 64 \div 4 \\ \swarrow \quad \searrow \\ \underline{24} \quad \underline{\quad} \\ \div 4 \quad \div 4 \end{array}$$

e

$$\begin{array}{r} 91 \div 7 \\ \swarrow \quad \searrow \\ \underline{21} \quad \underline{\quad} \\ \div 7 \quad \div 7 \end{array}$$

f

$$\begin{array}{r} 144 \div 8 \\ \swarrow \quad \searrow \\ \underline{80} \quad \underline{64} \\ \div 8 \quad \div 8 \end{array}$$

2

Now try these:

a $90 \div 6$ $\begin{cases} \rightarrow \frac{60}{\quad} \div \frac{6}{\quad} \\ \rightarrow \frac{30}{\quad} \div \frac{6}{\quad} \end{cases} = \square$

b $105 \div 7$ $\begin{cases} \rightarrow \frac{70}{\quad} \div \frac{\quad}{\quad} \\ \rightarrow \frac{\quad}{\quad} \div \frac{\quad}{\quad} \end{cases} = \square$

c $72 \div 4$ $\begin{cases} \rightarrow \frac{\quad}{\quad} \div \frac{\quad}{\quad} \\ \rightarrow \frac{24}{\quad} \div \frac{\quad}{\quad} \end{cases} = \square$

d $144 \div 8$ $\begin{cases} \rightarrow \frac{\quad}{\quad} \div \frac{\quad}{\quad} \\ \rightarrow \frac{96}{\quad} \div \frac{\quad}{\quad} \end{cases} = \square$

Hmmm ... $91 \div 7$.
The unit digit helps
me here. What
multiple of 7 ends
in 1? I know, 21.
So that makes the
other number 70!



DISCOVER

MENTAL DIVISION STRATEGIES – HALVING STRATEGY