

Learning Enhancement Team

Model Answers: Division by Chunking

Division by Chunking
study guide



- (a) half of 152 is 76. Halving is the same as dividing by 2 and so you can use chunking to find the answer:

$$\begin{array}{r}
 \textcircled{52} \\
 \frac{152}{2} = \frac{100}{2} + \frac{50}{2} + \frac{2}{2} \\
 \downarrow \quad \downarrow \quad \downarrow \\
 = 50 + 25 + 1 = 76
 \end{array}$$

- (b) $774 \div 2 = 387$

$$\begin{array}{r}
 \textcircled{74} \\
 \frac{774}{2} = \frac{700}{2} + \frac{70}{2} + \frac{4}{2} \\
 \downarrow \quad \downarrow \quad \downarrow \\
 = 350 + 35 + 2 = 387
 \end{array}$$

- (c) $\frac{3498}{2} = 1749$

$$\begin{array}{r}
 \textcircled{498} \quad \textcircled{98} \\
 \frac{3498}{2} = \frac{3000}{2} + \frac{400}{2} + \frac{90}{2} + \frac{8}{2} \\
 \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\
 = 1500 + 200 + 45 + 4 = 1749
 \end{array}$$

(d) $\frac{72}{3} = 24$

$$\frac{72}{3} = \frac{60}{3} + \frac{12}{3}$$

$$\downarrow \quad \downarrow$$

$$= 20 + 4 = 24$$

(e) 282 divided by 3 is 94.

$$\frac{282}{3} = \frac{270}{3} + \frac{12}{3}$$

$$\downarrow \quad \downarrow$$

$$= 90 + 4 = 94$$

Use this multiplication table to help with questions d, e and f.

3	1
6	2
9	3
12	4
15	5
18	6
21	7
24	8
27	9

(f) $5811 \div 3 = 1937$

$$\frac{5811}{3} = \frac{3000}{3} + \frac{2700}{3} + \frac{90}{3} + \frac{21}{3}$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$= 1000 + 900 + 30 + 7 = 1937$$

(g) $512 \div 4 = 128$

$$\frac{512}{4} = \frac{400}{4} + \frac{80}{4} + \frac{32}{4}$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$= 100 + 20 + 8 = 128$$

(h) a quarter of 832 is 208.

$$832 = \frac{800}{4} + \frac{32}{4}$$

$$\downarrow \quad \downarrow$$

$$= 200 + 8 = 208$$

Use this multiplication table to help with questions g and h.

4	1
8	2
12	3
16	4
20	5
24	6
28	7
32	8
36	9

(i) $\frac{8900}{5} = 1780$

$$\frac{8900}{5} = \frac{5000}{5} + \frac{3500}{5} + \frac{400}{5}$$
$$= 1000 + 700 + 80 = 1780$$

(j) $705 \div 5 = 141$

$$\frac{705}{5} = \frac{500}{5} + \frac{200}{5} + \frac{5}{5}$$
$$= 100 + 40 + 1 = 141$$

Use this multiplication table to help with questions i and j.

5	1
10	2
15	3
20	4
25	5
30	6
35	7
40	8
45	9

(k) $\frac{414}{6} = 69$

$$\frac{414}{6} = \frac{360}{6} + \frac{54}{6}$$
$$= 60 + 9 = 69$$

Use this multiplication table to help with questions k and l.

6	1
12	2
18	3
24	4
30	5
36	6
42	7
48	8
54	9

(l) 3102 divided by 6 is 517.

$$\frac{3102}{6} = \frac{3000}{6} + \frac{60}{6} + \frac{42}{6}$$
$$= 500 + 10 + 7 = 517$$

(m) $\frac{2506}{7} = 358$

$$\frac{2506}{7} = \frac{2100}{7} + \frac{350}{7} + \frac{56}{7}$$

(406)

$$= 300 + 50 + 8 = 358$$

Use this multiplication table to help with question m.

7	1
14	2
21	3
28	4
35	5
42	6
49	7
56	8
63	9

(n) an eighth of 456 is 57.

$$\frac{456}{8} = \frac{400}{8} + \frac{56}{8}$$
$$= 50 + 7 = 57$$

Use this multiplication table to help with question n.

8	1
16	2
24	3
32	4
40	5
48	6
56	7
64	8
72	9

(o) $\frac{774}{9} = 86$

$$\frac{774}{9} = \frac{720}{9} + \frac{54}{9}$$
$$= 80 + 6 = 86$$

Use this multiplication table to help with question o.

9	1
18	2
27	3
36	4
45	5
54	6
63	7
72	8
81	9

1. The following divisions have remainders. Use the table in the study guide: [Division by Chunking](#) to help you express your answers as a decimal.

- (a) half of 755 is 377.5

$$\begin{array}{r} \textcircled{55} \quad \textcircled{5} \\ \frac{755}{2} = \frac{700}{2} + \frac{50}{2} + \frac{4}{2} + \frac{1}{2} \\ \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ = 350 + 25 + 2 + 0.5 = 377.5 \end{array}$$

- (b) $1421 \div 3 = 473.\dot{6}$

$$\begin{array}{r} \textcircled{221} \quad \textcircled{11} \\ \frac{1421}{3} = \frac{1200}{3} + \frac{210}{3} + \frac{9}{3} + \frac{2}{3} \\ \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ = 400 + 70 + 3 + 0.\dot{6} = 473.\dot{6} \end{array}$$

- (c) $\frac{8991}{4} = 2247.75$

$$\begin{array}{r} \textcircled{991} \quad \textcircled{191} \quad \textcircled{31} \\ \frac{8991}{4} = \frac{8000}{4} + \frac{800}{4} + \frac{160}{4} + \frac{28}{4} + \frac{3}{4} \\ \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ = 2000 + 200 + 40 + 7 + 0.75 = 2247.75 \end{array}$$

- (d) $\frac{412}{5} = 82.4$

$$\begin{array}{r} \frac{412}{5} = \frac{400}{5} + \frac{10}{5} + \frac{2}{5} \\ \downarrow \quad \downarrow \quad \downarrow \\ = 80 + 2 + 0.4 = 82.4 \end{array}$$

(e) 777 divided by 6 is 129.5

$$\begin{array}{r} \textcircled{177} \quad \textcircled{57} \\ \frac{777}{6} = \frac{600}{6} + \frac{120}{6} + \frac{54}{6} + \frac{3}{6} \\ \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ = 100 + 20 + 9 + 0.5 = 129.5 \end{array}$$

(f) $311 \div 8 = 38.875$

$$\begin{array}{r} \textcircled{71} \\ \frac{311}{8} = \frac{240}{8} + \frac{64}{8} + \frac{7}{8} \\ \downarrow \quad \downarrow \quad \downarrow \\ = 30 + 8 + 0.875 = 38.875 \end{array}$$

(g) $3262 \div 9 = 362.\dot{4}$

$$\begin{array}{r} \textcircled{562} \quad \textcircled{22} \\ \frac{3262}{9} = \frac{2700}{9} + \frac{540}{9} + \frac{18}{9} + \frac{4}{9} \\ \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ = 300 + 60 + 2 + 0.\dot{4} = 362.\dot{4} \end{array}$$

(h) a fifth of 832 is 166.4

$$\begin{array}{r} \textcircled{32} \\ \frac{832}{5} = \frac{800}{5} + \frac{30}{5} + \frac{2}{5} \\ \downarrow \quad \downarrow \quad \downarrow \\ = 160 + 6 + 0.4 = 166.4 \end{array}$$

(i) $\frac{7562}{3} = 2520.\dot{6}$

$$\frac{7562}{3} = \frac{6000}{3} + \frac{1500}{3} + \frac{60}{3} + \frac{2}{3}$$

$$= 2000 + 500 + 20 + 0.\dot{6} = 2520.\dot{6}$$

(j) $316 \div 9 = 35.\dot{1}$

$$\frac{316}{9} = \frac{270}{9} + \frac{45}{9} + \frac{1}{9}$$

$$= 30 + 5 + 0.\dot{1} = 35.\dot{1}$$

(k) $\frac{99}{6} = 16.5$

$$\frac{99}{6} = \frac{60}{6} + \frac{36}{6} + \frac{3}{6}$$

$$= 10 + 6 + 0.5 = 16.5$$

(l) 653 divided by 3

$$\frac{653}{3} = \frac{600}{3} + \frac{30}{3} + \frac{21}{3} + \frac{2}{3}$$

$$= 200 + 10 + 7 + 0.\dot{6} = 217.\dot{6}$$



These model answers are one of a series on mathematics produced by the Learning Enhancement Team.

Scan the QR-code with a smartphone app for [more resources](#).



University of East Anglia

STUDENT SUPPORT SERVICE