

WA6MNACN1

Calculating with number

Core + Challenge

Multiplying and Dividing Whole Numbers

I can choose efficient strategies to multiply and divide whole numbers, and estimate to check.

Name: _____ Date: _____ Score: _____ / 57

Key idea

Partition a number into place-value parts, multiply each part, then **add** the parts. An **area model** shows this.

Short division: divide each place from the left. Carry any **remainder** into the next place.

Estimate first by rounding, then check that your answer is close.

Example: $34 \times 26 = 600 + 80 + 180 + 24 = 884$. Estimate: $30 \times 30 = 900$, so 884 is reasonable.

$$34 \times 26 = 600 + 80 + 180 + 24 = 884$$

	30	4
20	600	80
6	180	24

$$852 \div 4 = 213$$

$$\begin{array}{r} 213 \\ 4 \overline{) 852} \\ \underline{8} \\ 5 \\ \underline{4} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

A Warm up *complete and calculate*

/ 16 marks

Complete the area model. Then write the answer. 1 mark each.

1 $47 \times 6 =$ _____

	40	7
6		

2 $38 \times 5 =$ _____

	30	8
5		

3 $23 \times 14 =$ _____

	20	3
10		
4		

4 $125 \times 4 =$ _____

	100	20	5
4			

Complete the short division. 1 mark each.

5 $96 \div 4$

$$4 \overline{) 96}$$

6 $138 \div 6$

$$6 \overline{) 138}$$

7 $512 \div 8$

$$8 \overline{) 512}$$

8 $745 \div 5$

$$5 \overline{) 745}$$

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Use a mental strategy. Write the answer. 1 mark each.

9 $25 \times 16 =$

10 $99 \times 7 =$

11 $480 \div 6 =$

12 $4 \times 19 \times 25 =$

13 $12 \times 15 =$

14 $3,600 \div 40 =$

15 $1,000 \div 8 =$

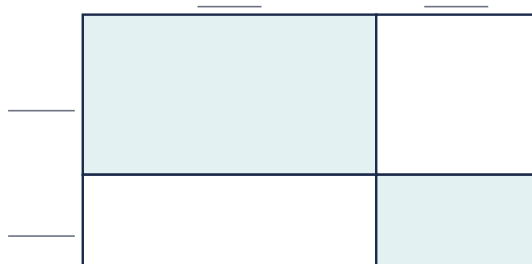
16 $50 \times 34 =$

B

Practise *use the skill*

/ 22 marks

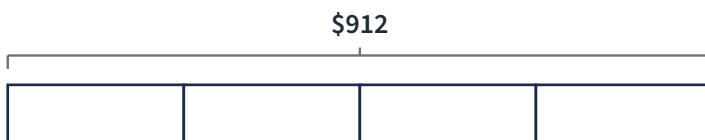
- 1 A concert at Kings Park has **46** rows of **38** seats. **Estimate** the number of seats first. Then label and complete the area model to find the **exact** number. [3 marks]



Estimate: _____

Exact: _____

- 2 The school fete raised **\$912**. It is shared **equally** between **4** charities. Complete the bar model and use short division to find each share. [2 marks]



$$4 \overline{) 912}$$

Answer: _____

- 3 **245** students are going to Perth Zoo. Each minibus carries **8** students. Use short division. How many minibuses are needed? Explain what the remainder means. [3 marks]

$$8 \overline{) 245}$$

Answer: _____

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- 4 Use **partitioning** to find 7×368 . Fill in the gaps.

[2 marks]

$$7 \times 368 = 7 \times \underline{\hspace{2cm}} + 7 \times \underline{\hspace{2cm}} + 7 \times \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

- 5 Muesli bars at Coles come in boxes of **12**. Complete the table.

[3 marks]

Boxes	Muesli bars
15	
24	
	432

- 6 A netball club buys **28** dresses at **\$49** each. **Estimate** the cost first. Then work out the exact cost.

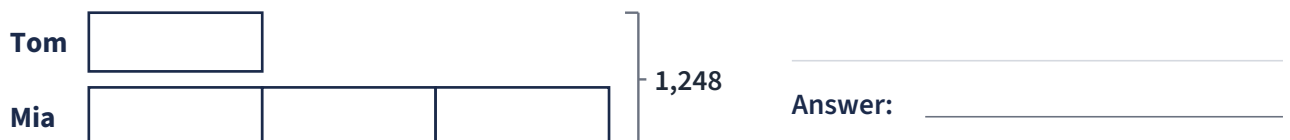
[2 marks]

Estimate: _____

Exact: _____

- 7 Mia's school collected **3 times** as many cans as Tom's school. Together they collected **1,248** cans. Complete the bar model. How many cans did each school collect?

[2 marks]



- 8 This area model shows $1,296 \div 6$. The rectangle is 6 tall and its area is split into 1,200 and 96. Write the missing lengths. What is $1,296 \div 6$?

[2 marks]



Answer: _____

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- 9 Complete the doubling table for **17**. Then use it to find **25×17** . (Hint: $25 = 16 + 8 + 1$.) [3 marks]

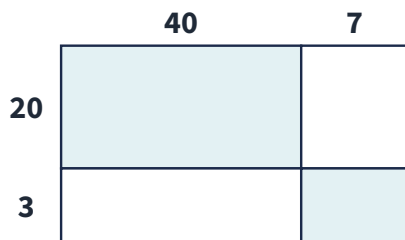
Multiply	1×17	2×17	4×17	8×17	16×17
Answer	17				

Answer: _____

C Think it through *explain your thinking*

/ 10 marks

- 1 Jai says $47 \times 23 = 40 \times 20 + 7 \times 3 = 821$. Do you agree with Jai? Use the area model to explain. [2 marks]



- 2 **True or false?** $16 \times 25 = 8 \times 50$. Explain without working out both sides. [2 marks]

- 3 **Always, sometimes or never true?** “A 3-digit number divided by a 1-digit number gives a 2-digit answer.” Circle one. Give examples. [2 marks]

Always

Sometimes

Never

- 4 Which is the **odd one out**? 24×15 , 12×30 , 36×10 , 6×50 Explain. [2 marks]

- 5 Priya says $6 \times 199 = 6 \times 200 - 1 = 1,199$. Do you agree with Priya? Explain her mistake and find the correct answer. [2 marks]

D**Challenge** *stretch yourself*

/ 9 marks

- 1 Use the digits **3, 4, 5** and **6** once each to make two 2-digit numbers. [3 marks]

$$\square \square \times \square \square$$

a) Make the **largest** possible product. b) Make the **smallest** possible product.

Answer: _____

- 2 The missing digits can be different. $\square 7 \times 4 = 3\square 8$ Find **all** the possible answers. Explain how you know you have them all. [3 marks]

Answer: _____

- 3 The P&C orders **468** sausages for the fete. Sausages come in packs of **18**, and each pack costs **\$12**. Every sausage is sold in bread for **\$3**. The bread was donated. How much **profit** do they make? [3 marks]

Answer: _____

How did I go?

Warm up ___ / 16 Practise ___ / 22 Think it through ___ / 10 Challenge ___ / 9 **Total** ___ / 57

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