

WA5MNAMN1

Modelling with number

Core + Challenge

NAPLAN-style

Problem Solving with Number

I can show a real problem with a diagram and an equation, solve it, and explain what the answer means.

Name: _____ Date: _____ Score: _____ / 56

Key idea

Read the problem. What do you know? What do you need to find?

Show it with a diagram (bar model or number line), then write an **equation**. Use ? for the unknown.

Solve it, then **check**: does the answer make sense? Write the answer in a sentence with **units**.

Example: 43 people are on a bus. 17 get off and 25 get on. $43 - 17 + 25 = 51$, so 51 people are on the bus.

Equation: $43 - 17 + 25 = 51$



Diagram



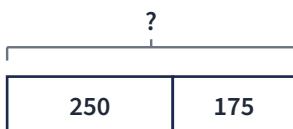
A

Warm up *model, match and solve*

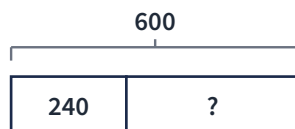
/ 16 marks

Write an equation for each bar model. Find ?. 1 mark each.

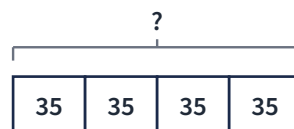
1



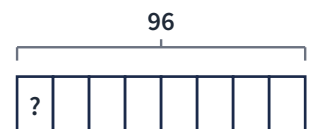
2



3



4



Circle the number sentence that matches the story. Then work it out. 1 mark each.

5

Kai had 64 cards. He gave away 18. How many are left?

$64 + 18$

$64 - 18$

$18 - 64$

6

5 packs of 12 pens. How many pens?

$5 + 12$

5×12

$12 \div 5$

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- 7 48 kids make 4 equal teams. How many in each team?

48×4

$48 - 4$

$48 \div 4$

- 8 Mia is 9. Her dad is 27 years older. How old is her dad?

$27 - 9$

$9 + 27$

$27 \div 9$

Write the numbers on the bar model. Write ? for the unknown. Then solve. 1 mark each.

- 9 Sam has **45** marbles. Jo has **18 more**. How many has Jo?



- 10 A **150** cm ribbon is cut into **5** equal pieces. How long is each piece?



- 11 **80** people were at the pool. **35** went home. How many are left?



- 12 **6** boxes each hold **25** pencils. How many pencils?



Find the number in the box. 1 mark each.

13 $125 + \square = 300$

14 $\square - 48 = 76$

15 $6 \times \square = 84$

16 $\square \div 5 = 17$

B Practise use the skill

/ 21 marks

- 1 A Transperth train leaves Perth with **386** people. At Claremont, **127** people get off and **58** people get on. Write an equation. How many people are on the train now? [2 marks]

Answer: _____

- 2 In Kings Park, Tom walks **1,250 m**. Mia walks **480 m more** than Tom. Label the bar model. How far does Mia walk? How far do they walk altogether? [3 marks]



Answer: _____

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- 3 At a Perth Scorchers game a child ticket costs **\$14**. An adult ticket costs **3 times** as much. Label the bar model. What does a family of **2 adults** and **3 children** pay? [3 marks]

Child	\$14		
Adult			

Answer: _____

- 4 Three students kept a reading log. Complete the table. Who read the **most** pages? [3 marks]

Name	Days	Pages each day	Total pages
Ava	6	24	
Ben	8	17	
Cy	5	29	

Answer: _____

- 5 A school has **540** chairs. It buys **12** packs of **6** more chairs. Circle the number sentence that matches. How many chairs does the school have now? [2 marks]

$540 + 12 + 6$

$12 \times 6 + 540$

$540 \times 12 + 6$

$540 - 12 \times 6$

Answer: _____

- 6 A bakery bakes **250** muffins. It packs them in boxes of **6** and sells each **full** box for **\$9**. How much money does it make from the full boxes? How many muffins are left over? [2 marks]

Answer: _____

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- 7 Some children were on a bus. **14** got off. Now there are **29** children on the bus. [2 marks]
Write an equation with a **?** for the unknown. How many children were on the bus at the start?

Answer: _____

- 8 A road trip goes from Perth to Mandurah, then on to Bunbury. The distances are shown. The Lee family drives from Perth to Bunbury and **back** the same way. [2 marks]
How far do they drive?



Answer: _____

- 9 4 classes of **28** students and **9** teachers go to the zoo. Lily says there are **1,121** people. Use an estimate to show she is wrong. How many people are there? [2 marks]

Answer: _____

C Think it through *explain your thinking*

/ 10 marks

- 1 “Tom has **45** stickers. He has **12 more** than Sam.” Ben says, “More means add, so Sam has $45 + 12 = 57$.” Do you agree with Ben? Draw a bar model to explain. [2 marks]

- 2 True or false? $36 + \square = 90$ and $90 - 36 = \square$ have the same answer. Explain. [2 marks]

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- 3 **Always, sometimes or never true?** “A story with the word **altogether** needs addition.” Circle one. Give examples. [2 marks]

☐ Always☐ Sometimes☐ Never

- 4 Which is the **odd one out**? Explain. [2 marks]
- $45 \div 3 = \square$ $\square \times 4 = 60$ $100 - \square = 85$ $\square + 25 = 30$

- 5 “A school has **6** classes of **27** students. **38** students are away. How many students are at school?” Ava writes $6 \times 27 - 38$. Ben writes $6 \times 27 + 38$. Who is right? Explain and solve. [2 marks]

D Challenge *stretch yourself*

/ 9 marks

- 1 Tickets for **2 adults** and **3 children** cost **\$110**. A child ticket is **\$10 less** than an adult ticket. Find the price of each ticket. Show your working with a diagram. [3 marks]

Answer: _____

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- 2 A café has tables for **4** people and tables for **6** people. **30** people come, and every chair at every table used is full. How many of each table could be used? Find **all** the ways. [3 marks]

Tables of 4	Tables of 6	People

- 3 A water tank has **3,000 L** of water in it (it can hold 5,000 L). A family uses **185 L** each day. It rains once each week and the rain adds **600 L**. How much water is in the tank after **2 weeks** (14 days)? [3 marks]

Answer: _____

How did I go?

Warm up ___ / 16 Practise ___ / 21 Think it through ___ / 10 Challenge ___ / 9 **Total ___ / 56**

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