Merit Tutoring

WORKSHEET 17

Finding Unknown Values - Inverse Operations

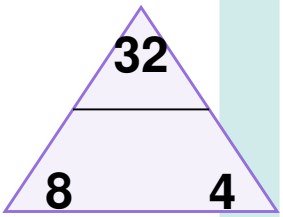
Year 5 Mathematics — Operations Strand

Australian Curriculum v9.0 — AC9M5A01, AC9M5A02

Name: _____ **Date:** _____

Section 1: Fluency - Fact Families

Question 1: Write the multiplication and division fact family for the numbers 8, 4, and 32.



- _____ × _____ = _____
- _____ × _____ = _____
- _____ ÷ _____ = _____
- _____ ÷ _____ = _____

Question 2: If $12 \times 5 = 60$, what is $60 \div 12$?

Answer: _____

Question 3: Complete the fact family for 6, 7, and 42.

$6 \times 7 =$ _____ $7 \times 6 =$ _____

$42 \div 6 =$ _____ $42 \div 7 =$ _____

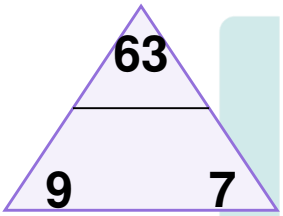
Question 4: If $9 \times 8 = 72$, write the related division fact.

Answer: _____

Question 5: What multiplication fact is related to $56 \div 7 = 8$?

Answer: _____

Question 6: Use the number triangle to write all four facts.



Answer: _____

Question 7: If $48 \div 6 = 8$, what is 8×6?

Answer: _____

Fact Family Detective Says:

"You're a Mystery Master!"

Joke Time: Why do multiplication and division make great friends?
Because they always have each other's back!

Section 2: Reasoning - Missing Multipliers

Question 8: Find the missing number: $7 \times \square = 42$

Answer: _____

Question 9: Find the missing number: $\square \div 9 = 4$

Answer: _____

Question 10: Solve: $\square \times 6 = 54$

Answer: _____

Question 11: What number goes in the mystery box?

$\boxed{?} \times 8 = 64$

Answer: _____

Question 12: Find the unknown: $72 \div \square = 9$

Answer: _____

Question 13: Complete: $5 \times \square = 45$

Answer: _____

Question 14: What value makes this equation true? $\square \div 7 = 8$

Answer: _____

Mystery Math Monkey Says:

"You're Finding the Unknowns!"

Joke Time: Why did the unknown value go to school?
To find its identity!

Section 3: Challenge - Thinking Backwards

Question 15: I think of a number. I multiply it by 3 and get 18. What was my number?

Answer: _____

Question 16: I start with a number, divide it by 4, and get 7. What was my starting number?

Answer: _____

Question 17: When I multiply my mystery number by 6, I get 42. What is my mystery number?

Answer: _____

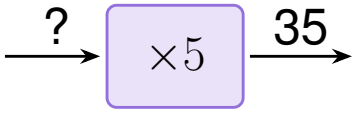
Question 18: A number is divided by 8 to give 9. What is the number?

Answer: _____

Question 19: If I multiply a secret number by 12 and the answer is 84, what is the secret number?

Answer: _____

Question 20: Look at this mystery machine. What number goes in?



Answer: _____

Question 21: A number divided by 5 equals 11. Find the number.

Answer: _____

Question 22: If $n \times 9 = 63$, what is n?

Answer: _____

Agent Unknown Says:

"You've Cracked the Code!"

Joke Time: Why did the unknown variable become a spy? Because it was good at staying hidden!

Excellent work! Check your answers on the next page.

WORKSHEET 17
ANSWER KEY

Section 1: Fluency - Fact Families

1. $8 \times 4 = 32$; $4 \times 8 = 32$; $32 \div 8 = 4$; $32 \div 4 = 8$
2. 5
3. 42; 42; 7; 6
4. $72 \div 9 = 8$ (or $72 \div 8 = 9$)
5. $7 \times 8 = 56$ (or $8 \times 7 = 56$)
6. $9 \times 7 = 63$; $7 \times 9 = 63$; $63 \div 9 = 7$; $63 \div 7 = 9$
7. 48

Section 2: Reasoning - Missing Multipliers

8. 6
9. 36
10. 9
11. 8
12. 8
13. 9
14. 56

Section 3: Challenge - Thinking Backwards

15. 6 (because $6 \times 3 = 18$)
16. 28 (because $28 \div 4 = 7$)
17. 7 (because $7 \times 6 = 42$)
18. 72 (because $72 \div 8 = 9$)
19. 7 (because $7 \times 12 = 84$)
20. 7 (because $7 \times 5 = 35$)
21. 55 (because $55 \div 5 = 11$)
22. $n = 7$ (because $7 \times 9 = 63$)

WORKSHEET 18

Finding Unknown Values - Solving Equations

Year 5 Mathematics — Operations Strand

Australian Curriculum v9.0 — AC9M5A01, AC9M5A02

Name: _____ **Date:** _____

Section 1: Fluency - Simple Equations

Question 1: Solve for n: $48 \div n = 6$

Answer: _____

Question 2: Solve for x: $x \times 7 = 49$

Answer: _____

Question 3: Find a: $a \div 5 = 8$

Answer: _____

Question 4: Solve: $9 \times m = 54$

Answer: _____

Question 5: What is p if $p \times 4 = 36$?

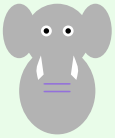
Answer: _____

Question 6: Find the value: $63 \div b = 7$

Answer: _____

Question 7: Solve for k: $k \times 8 = 72$

Answer: _____



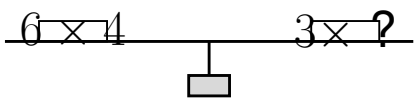
Equation Elephant Says:

"You're an Equation Expert!"

Joke Time: Why was the equals sign so humble? Because it knew it wasn't less than or greater than anyone else!

Section 2: Reasoning - Balancing Equations

Question 8: What number must replace the ? to make the scale balance?



Answer: _____

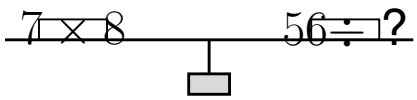
Question 9: Balance the equation: $5 \times 6 = \square \times 3$

Answer: _____

Question 10: What goes in the box? $48 \div 4 = 24 \div \square$

Answer: _____

Question 11: Make the scale balance:



Answer: _____

Question 12: Complete: $9 \times 5 = 15 \times \square$

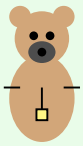
Answer: _____

Question 13: Find the missing value: $12 \times 3 = 4 \times \square$

Answer: _____

Question 14: Balance: $64 \div 8 = \square \times 2$

Answer: _____



Balance Bear Says:

"You're Keeping Things Equal!"

Joke Time: Why did the balance scale go to school?
To learn how to keep things fair and equal!

Section 3: Challenge - Number Properties

Question 15: Fill in the blank using the commutative property:

$8 \times 5 = 5 \times$ _____

Answer: _____

Question 16: Use the associative property: $(3 \times 4) \times 5 = 3 \times (4 \times$ _____$)$

Answer: _____

Question 17: Complete using your knowledge of properties:
$6 \times 7 = 7 \times$ _____

Answer: _____

Question 18: If $4 \times 9 = 36$, then $9 \times 4 =$ _____ (What property is this?)

Answer: _____

Question 19: Rearrange using properties:
$(2 \times 5) \times 6 = 2 \times ($_____ $\times$ _____$)$

Answer: _____

Question 20: True or False: $12 \times 3 = 3 \times 12$? Explain which property this demonstrates.

Answer: _____

Question 21: Use inverse operations to solve: If $n \times 6 = 42$, what is n?

Answer: _____

Question 22: Challenge: If $a \times b = 24$ and $a = 6$, find b. Then use the commutative property to write another equation.

$b =$ _____ New equation: _____

Property Parrot Says:

"You're a Property Pro!"

Joke Time: Why did the commutative property get invited to every party?
Because it knew how to switch things up!

Outstanding work! Check your answers on the next page.

WORKSHEET 18
ANSWER KEY

Section 1: Fluency - Simple Equations

1. $n = 8$
2. $x = 7$
3. $a = 40$
4. $m = 6$
5. $p = 9$
6. $b = 9$
7. $k = 9$

Section 2: Reasoning - Balancing Equations

8. 8 (because $6 \times 4 = 24$ and $3 \times 8 = 24$)
9. 10 (because $5 \times 6 = 30$ and $10 \times 3 = 30$)
10. 2 (because $48 \div 4 = 12$ and $24 \div 2 = 12$)
11. 1 (because $7 \times 8 = 56$ and $56 \div 1 = 56$)
12. 3 (because $9 \times 5 = 45$ and $15 \times 3 = 45$)
13. 9 (because $12 \times 3 = 36$ and $4 \times 9 = 36$)
14. 4 (because $64 \div 8 = 8$ and $4 \times 2 = 8$)

Section 3: Challenge - Number Properties

15. 8 (Commutative property: order doesn't matter in multiplication)
16. 5 (Associative property: grouping doesn't change the product)
17. 6 (Commutative property)
18. 36; This demonstrates the commutative property of multiplication
19. 5 and 6 (Associative property)
20. True; This demonstrates the commutative property
21. $n = 7$ (using inverse operation: $42 \div 6 = 7$)
22. $b = 4$ (because $24 \div 6 = 4$); New equation: $4 \times 6 = 24$

Brilliant!

You've mastered Finding Unknown Values!
Keep up the fantastic work in Year 5 Maths!