Merit Tutoring

WORKSHEET 13

Year 6 Mathematics: Calculating & Money

Division & Remainders

Focus: Short Division and Fact Families

Name: _____ **Date:** _____

Division Basics

Division is sharing or grouping a number into equal parts.

The Bus Stop Method (Short Division):

answer goes here

divisor ⟌ dividend

Example: $486 \div 2$

$$\begin{array}{r} 243 \\ 2\overline{)486} \end{array}$$

Answer: 243

Key Fact: Division and multiplication are inverse operations!

If $6 \times 8 = 48$, then $48 \div 6 = 8$

Section 1: Short Division (Fluency)

1. Calculate $486 \div 2$

$$2\overline{)486}$$

Answer: _____

2. Calculate $315 \div 3$

$$3 \overline{)\,3\ 1\ 5}$$

Answer: _____

3. Calculate $648 \div 4$

$$4 \overline{)\,6\ 4\ 8}$$

Answer: _____

4. Calculate $856 \div 2$

Answer: _____

5. Calculate $936 \div 3$

Answer: _____

6. Calculate $1248 \div 4$

Answer: _____

DIVISION DYNAMO!

Division Dog

Why did the two fours skip lunch?

Because they already eight! (ate)

Section 2: Division with Remainders (Reasoning)

7. Calculate $25 \div 4$. Write the remainder as 'r' (e.g., 6 r 1).

Answer: _____

8. Calculate $50 \div 3$. Write the remainder.

Answer: _____

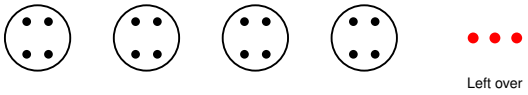
9. Calculate $47 \div 5$. Write the remainder.

Answer: _____

10. Calculate $83 \div 6$. Write the remainder.

Answer: _____

11. Look at the grouping diagram below. 15 dots are shared into 4 groups. How many are in each group and how many are left over?



Left over

Answer: _____

REMAINDER RANGER!

Sharing Shark

What's a shark's favourite way to do maths?

With a calculator... because they're always fin-ishing fast!

Section 3: Inverse Operations (Challenge)

12. If $15 \times 12 = 180$, what is $180 \div 15$?

Answer: _____

13. Find the missing number: $\_\_\_ \div 5 = 14$

Answer: _____

14. If $144 \div 12 = 12$, what is 12×12?

Answer: _____

15. Complete the fact family using the numbers 8, 7, and 56:

$8 \times 7 = 56$

$7 \times 8 = 56$
$56 \div 8 = \_\_\_\_$
$56 \div 7 = \_\_\_\_$

Answer: _____

16. A number multiplied by 9 gives 108. What is the number?

Answer: _____

17. Find the missing dividend: $\_\_\_\_ \div 6 = 45$

Answer: _____

FACT FAMILY CHAMPION!

Remains Robot

Why did the robot do division?
To find out how many bytes it could share!

Excellent Work! Check your answers on the next page.

ANSWER KEY

Worksheet 13: Short Division & Fact Families

Section 1: Short Division

1. 243
2. 105
3. 162
4. 428
5. 312
6. 312

Section 2: Division with Remainders

7. 6 r 1 (25 divided by 4 is 6 with 1 left over)
8. 16 r 2 (50 divided by 3 is 16 with 2 left over)
9. 9 r 2 (47 divided by 5 is 9 with 2 left over)
10. 13 r 5 (83 divided by 6 is 13 with 5 left over)
11. 3 in each group with 3 left over ($15 \div 4 = 3$ r 3)

Section 3: Inverse Operations

12. 12 (division is the inverse of multiplication)
13. 70 (because $70 \div 5 = 14$, or $14 \times 5 = 70$)
14. 144 (inverse operation confirms the original)
15. $56 \div 8 = 7$ and $56 \div 7 = 8$
16. 12 (because $108 \div 9 = 12$)
17. 270 (because $45 \times 6 = 270$)

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WORKSHEET 14

Year 6 Mathematics: Calculating & Money

Division & Remainders

Focus: Expressing and Interpreting Remainders

Name: _____ **Date:** _____

Different Ways to Express Remainders

Remainders can be written in THREE ways:

1. As a whole number remainder: $13 \div 4 = 3$ r 1

2. As a fraction or mixed number: $13 \div 4 = 3\frac{1}{4}$

(The remainder 1 becomes the numerator, divisor 4 becomes the denominator)

3. As a decimal: $13 \div 4 = 3.25$

(Continue dividing using decimal places)

Interpreting Remainders in Word Problems:

- **Round UP:** "How many buses are needed?" (Can't have half a bus!)
- **Round DOWN/Ignore:** "How many full boxes can I make?"
- **Use as decimal:** "Share $10 among 4 people" ($2.50 each)

Section 1: Remainders as Fractions/Decimals (Fluency)

1. Calculate $13 \div 2$. Write the answer as a decimal.

Answer: _____

2. Calculate $21 \div 4$. Write the answer as a mixed number.

Answer: _____

3. Calculate $17 \div 5$. Write the answer as a mixed number.

Answer: _____

4. Calculate $11 \div 4$. Write the answer as a decimal.

Answer: _____

5. Calculate $23 \div 10$. Write the answer as a decimal.

Answer: _____

6. Calculate $19 \div 6$. Write the answer as a mixed number.

Answer: _____

DECIMAL DETECTIVE!

Decimal Hunter

Why are decimals so good at sharing?

Because they always find the point!

Section 2: Real World Problems (Reasoning)

7. 100 students are going on a trip. Each bus holds 30 students. How many buses are needed?
(Hint: You need to round UP because you can't leave students behind!)

Answer: _____

8. I have $50. Each game costs $12. How many games can I buy?
(Hint: You can only buy WHOLE games!)

Answer: _____

9. A baker has 85 cupcakes. She packs them into boxes of 6. How many FULL boxes can she make?

Answer: _____

10. $45 is shared equally among 4 people. How much does each person get?
(Write as a decimal amount in dollars)

Answer: _____

11. 75 chairs need to be arranged in rows of 8. How many complete rows can be made, and how many chairs are left over?

Answer: _____

PROBLEM-SOLVING PRO!

School Bus

Why did the bus driver love division?

Because he could always count on equal groups!

Section 3: Mystery Numbers (Challenge)

12. A number divided by 5 gives an answer of 12 with a remainder of 3. What is the number?
(Hint: Use the formula: Number = (Quotient × Divisor) + Remainder)

Answer: _____

13. When I divide a mystery number by 7, I get 8 with a remainder of 4. What is the mystery number?

Answer: _____

14. A number divided by 6 gives a quotient of 15 and a remainder of 5. What is the number?

Answer: _____

15. I'm thinking of a number. When divided by 4, it gives 20 with no remainder. What could my number be?

Answer: _____

16. A teacher has 150 stickers. She wants to give each of her 23 students an equal number. How many stickers does each student get, and how many are left over?

Answer: _____

17. Complete this division pattern:

$100 \div 5 = 20$

$200 \div 5 = 40$

$300 \div 5 =$ ____

$400 \div 5 =$ ____

Answer: _____

MYSTERY MASTER!

Mystery Trophy

What's a division problem's favourite game?

Hide and seek... because remainders are always hiding!

Outstanding Work! Check your answers on the next page.

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ANSWER KEY

Worksheet 14: Expressing & Interpreting Remainders

Section 1: Remainders as Fractions/Decimals

1. 6.5 (13 divided by 2 equals 6 with 0.5 or $\frac{1}{2}$ remaining)
2. $5\frac{1}{4}$ (21 divided by 4 equals 5 with remainder 1, which is $\frac{1}{4}$)
3. $3\frac{2}{5}$ (17 divided by 5 equals 3 with remainder 2, which is $\frac{2}{5}$)
4. 2.75 (11 divided by 4 equals 2.75)
5. 2.3 (23 divided by 10 equals 2.3)
6. $3\frac{1}{6}$ (19 divided by 6 equals 3 with remainder 1, which is $\frac{1}{6}$)

Section 2: Real World Problems

7. 4 buses (100 ÷ 30 = 3 r 10, but you need 4 buses to fit everyone)
8. 4 games (50 ÷ 12 = 4 r 2, you can only buy 4 complete games)
9. 14 full boxes (85 ÷ 6 = 14 r 1, so 14 complete boxes with 1 cupcake left)
10. $11.25 each (45 ÷ 4 = 11.25)
11. 9 complete rows with 3 chairs left over (75 ÷ 8 = 9 r 3)

Section 3: Mystery Numbers

12. 63 (12 × 5 = 60, then 60 + 3 = 63)
13. 60 (8 × 7 = 56, then 56 + 4 = 60)
14. 95 (15 × 6 = 90, then 90 + 5 = 95)
15. 80 (20 × 4 = 80)
16. Each student gets 6 stickers with 12 left over (150 ÷ 23 = 6 r 12)
17. $300 \div 5 = 60$ and $400 \div 5 = 80$ (pattern: increases by 20)

Phenomenal Achievement!

You've mastered Division & Remainders!
From bus stops to decimal dots!