



MATHEMATICS



N.S. Yr. 6 P.57

**Understand remainders
Round up or down after division**

Equipment

Paper, pencil, ruler
Calculator

MathSphere

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Concepts

The work on remainders and rounding after division continues in year 6, mainly with the concepts developed in year 5, but using larger numbers.

Remainders should be written as fractions, or as decimal fractions, usually up to two decimal places.

Thirds should be recognised as decimal fractions ie 0.3333 or 0.6666 and ninths can also be learnt, as the decimal fraction is easy to learn.

Making sensible decisions on whether to round up or down is also continued.

Division revision – remainders as fractions

Complete these division sums by writing the remainder as a fraction.

eg
$$7 \overline{) 34^6 5} \quad 49^2 \text{ } \frac{2}{7}$$

1. $6 \overline{) 245}$

2. $7 \overline{) 844}$

3. $3 \overline{) 347}$

4. $8 \overline{) 458}$

5. $4 \overline{) 679}$

6. $5 \overline{) 298}$

7. $9 \overline{) 506}$

8. $3 \overline{) 242}$

9. $5 \overline{) 821}$

10. $7 \overline{) 856}$

11. $4 \overline{) 527}$

12. $6 \overline{) 826}$

13. $8 \overline{) 945}$

14. $5 \overline{) 776}$

15. $9 \overline{) 466}$

Division revision – remainders as fractions

Complete these division sums by writing the remainder as a fraction.

eg
$$7 \overline{) 34^6 5} \quad 49^2 \text{ } \frac{2}{7}$$

1. $6 \overline{) 478}$

2. $7 \overline{) 277}$

3. $3 \overline{) 520}$

4. $8 \overline{) 239}$

5. $4 \overline{) 457}$

6. $5 \overline{) 528}$

7. $9 \overline{) 533}$

8. $3 \overline{) 484}$

9. $5 \overline{) 634}$

10. $7 \overline{) 458}$

11. $4 \overline{) 439}$

12. $6 \overline{) 777}$

13. $8 \overline{) 233}$

14. $5 \overline{) 822}$

15. $9 \overline{) 555}$

Division revision – remainders as fractions

Complete these division sums by rounding to one decimal place when necessary.

eg
$$\begin{array}{r} 49.28 \\ 7 \overline{)345.200} \end{array}$$
 is 49.3 to one decimal place

1. $5 \overline{)237}$

2. $6 \overline{)199}$

3. $7 \overline{)543}$

4. $3 \overline{)124}$

5. $8 \overline{)666}$

6. $2 \overline{)333}$

7. $6 \overline{)147}$

8. $9 \overline{)327}$

9. $7 \overline{)666}$

10. $4 \overline{)377}$

Division revision – remainders as fractions

Complete these division sums by rounding to one decimal place when necessary.

eg
$$\begin{array}{r} 43.16 \\ 6 \overline{)259.00} \end{array}$$
 is 43.2 to one decimal place

1. $6 \overline{)357}$

2. $7 \overline{)951}$

3. $8 \overline{)458}$

4. $4 \overline{)269}$

5. $9 \overline{)888}$

6. $3 \overline{)454}$

7. $7 \overline{)268}$

8. $5 \overline{)133}$

9. $8 \overline{)222}$

10. $9 \overline{)704}$

Division with money

When dividing money don't forget to work to two decimal places

eg

$$\begin{array}{r} \text{£ } 57.20 \\ 5 \overline{) \text{£} 283.100} \end{array}$$

1. $6 \overline{) \text{£ } 146.40}$

2. $7 \overline{) \text{£ } 110.25}$

3. $8 \overline{) \text{£ } 115.60}$

4. $4 \overline{) \text{£ } 130.00}$

5. $9 \overline{) \text{£ } 128.25}$

6. $3 \overline{) \text{£ } 258.00}$

7. $7 \overline{) \text{£ } 102.90}$

8. $5 \overline{) \text{£ } 561.25}$

9. $8 \overline{) \text{£ } 277.20}$

10. $9 \overline{) \text{£ } 769.50}$

Division with money

When dividing money don't forget to work to two decimal places

eg
$$\begin{array}{r} \text{£ } 57.20 \\ 5 \overline{) \text{£} 283.100} \end{array}$$

1. $7 \overline{) \text{£} 177.80}$

2. $8 \overline{) \text{£} 383.20}$

3. $9 \overline{) \text{£} 229.50}$

4. $5 \overline{) \text{£} 342.20}$

5. $3 \overline{) \text{£} 178.65}$

6. $4 \overline{) \text{£} 254.00}$

7. $8 \overline{) \text{£} 611.20}$

8. $6 \overline{) \text{£} 219.60}$

9. $5 \overline{) \text{£} 379.50}$

10. $6 \overline{) \text{£} 333.72}$

Writing decimals as fractions

Remember 0.35 can be written as a fraction $\frac{35}{100}$

Try these:

Write these decimals as fractions. Some you may be able to simplify.

1. $0.27 =$ 2. $0.45 =$ 3. $0.72 =$

4. $0.5 =$ 5. $0.67 =$ 6. $0.80 =$

7. $0.77 =$ 8. $0.25 =$ 9. $0.60 =$

10. $0.99 =$ 11. $0.13 =$ 12. $0.1 =$

Writing fractions as decimals

**Write these fractions as decimals.
Where necessary go to two decimal places.**

1. $\frac{16}{100} =$ 2. $\frac{32}{100} =$ 3. $\frac{20}{100} =$

4. $\frac{3}{5} =$ 5. $\frac{55}{100} =$ 6. $\frac{2}{10} =$

7. $\frac{17}{100} =$ 8. $\frac{4}{100} =$ 9. $\frac{25}{100} =$

10. $\frac{2}{3} =$ 11. $\frac{77}{100} =$ 12. $\frac{4}{10} =$

13. $\frac{3}{5} =$ 14. $\frac{32}{100} =$ 15. $\frac{1}{3} =$

Writing fractions as decimals

**Write these fractions as decimals.
Where necessary go to two decimal places.**

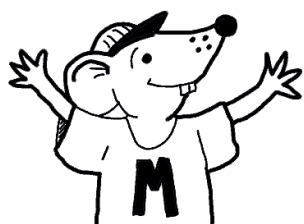
1. $\frac{13}{100} =$ 2. $\frac{89}{100} =$ 3. $\frac{50}{100} =$

4. $\frac{4}{5} =$ 5. $\frac{6}{100} =$ 6. $\frac{7}{10} =$

7. $\frac{11}{100} =$ 8. $\frac{9}{100} =$ 9. $\frac{75}{100} =$

10. $\frac{1}{3} =$ 11. $\frac{98}{100} =$ 12. $\frac{1}{10} =$

13. $\frac{2}{5} =$ 14. $\frac{77}{100} =$ 15. $\frac{2}{3} =$

Rounding to the nearest tenth

When rounding to the nearest tenth
you need to look at the hundredth
digit.
If it is 5 or more round up!!

Eg 5.562 is 5.6 to the nearest tenth.



It's the hundredths digit you need to look at.

Round each of these numbers to the nearest tenth.

1. 3.4444

2. 1.2345

3. 7.78

4. 27.59

5. 72.015

6. 8.36

7. 0.4545

8. 99.99

9. 0.17171

10. 3.3333

11. 6.66

12. 12.219

13. 7.654

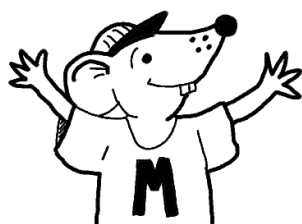
14. 0.22

15. 9.09

16. 5.655

17. 1.2345

18. 2.992

Rounding to the nearest tenth

When rounding to the nearest tenth
you need to look at the hundredth
digit.
If it is 5 or more round up!!

Eg 5.549 is 5.5 to the nearest tenth.



It's the hundredths digit you need to look at.

Round each of these numbers to the nearest tenth.

1. 2.749

2. 55.55

3. 0.06

4. 31.31

5. 72.77

6. 1.11111

7. 0.505

8. 3.99

9. 0.088

10. 2.722

11. 66.66

12. 54.545

13. 6.928

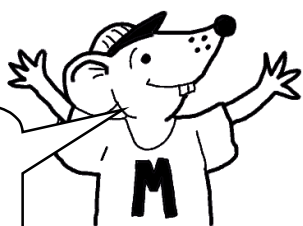
14. 0.590

15. 9.99

16. 2.6111

17. 5.321

18. 7.390



I've done the first for you!

Ninths

Ninths make an interesting pattern when converted to decimals.
Have a go at these.

Use a calculator to write these fractions as decimals and then round to 2 decimal places.

- | | | | | |
|----|-----------------|-----------------------|-----|---------------------------------------|
| 1. | $\frac{1}{9} =$ | <div>0.11111111</div> | $=$ | <div>0.11 to two decimal places</div> |
| 2. | $\frac{2}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 3. | $\frac{3}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 4. | $\frac{4}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 5. | $\frac{5}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 6. | $\frac{6}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 7. | $\frac{7}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 8. | $\frac{8}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |
| 9. | $\frac{9}{9} =$ | <div></div> | $=$ | <div>to two decimal places</div> |



Rounding up or down?

Make sensible decisions whether you should round these answers up or down to the nearest whole one, or round to two decimal places.

You will need a calculator for this work.

1. 568 people shared the first prize of £6 000.
How much did they each receive?
2. Mrs Long had a 10 metre roll of cotton. She shared it between her class of 32 children. How much did they each receive?
3. A box holds 850 sheets of paper. How many boxes do I need to hold 66 000 sheets?
4. The chocolate factory makes 35 000 bars of chocolate a day.
They are packed in boxes holding 36 bars.
How many boxes are filled in a day?
5. Gran has saved £8 500 to take the family on holiday to Thailand.
The cost for one person is £1 950. How many people could she take?
6. Fisherman Jim shared 1 000 metres of fishing line between the 30 competitors. How much line did they each receive?
7. A lightbulb lasts for 455 days. How many bulbs are needed to light a cave for 2 000 days?
8. The school prize of £100 is given to class 6T to go ten pin bowling.
It costs £2.80. How many children could go?

Answers

Page 3 (some may be simplified)

1. $40\frac{5}{6}$ 2. $120\frac{4}{7}$ 3. $115\frac{2}{3}$ 4. $57\frac{7}{8}$ 5. $169\frac{3}{4}$ 6. $59\frac{3}{5}$ 7. $56\frac{2}{9}$ 8. $80\frac{2}{3}$
9. $164\frac{1}{5}$ 10. $122\frac{2}{7}$ 11. $131\frac{3}{4}$ 12. $137\frac{4}{6}$ 13. $118\frac{1}{8}$ 14. $155\frac{1}{5}$ 15. $51\frac{7}{9}$

Page 4 (some may be simplified)

1. $79\frac{4}{6}$ 2. $39\frac{4}{7}$ 3. $173\frac{1}{3}$ 4. $29\frac{7}{8}$ 5. $114\frac{1}{4}$ 6. $105\frac{3}{5}$ 7. $59\frac{2}{9}$ 8. $161\frac{1}{3}$
9. $126\frac{4}{5}$ 10. $65\frac{3}{7}$ 11. $109\frac{3}{4}$ 12. $129\frac{3}{6}$ 13. $29\frac{1}{8}$ 14. $164\frac{2}{5}$ 15. $61\frac{6}{9}$

Page 5

1. 47.4	2. 33.2	3. 77.6	4. 41.3	5. 83.3
6. 166.5	7. 24.5	8. 36.3	9. 95.1	10. 94.3

Page 6

1. 59.5 **2.** 135.9 **3.** 57.3 **4.** 67.3 **5.** 98.7
6. 151.3 **7.** 38.3 **8.** 26.6 **9.** 27.8 **10.** 78.2

Page 7

1. £24.40	2. £15.75	3. £14.45	4. £32.50	5. £14.25
6. £86.00	7. £14.70	8. £112.25	9. £34.65	10. £85.50

Page 8

1. £25.40 2. £47.90 3. £25.50 4. £68.44 5. £59.55
6. £63.50 7. £76.40 8. £36.60 9. £75.90 10. £55.62

Page 9 (some may be simplified)

1. 27/100 2. 45/100 3. 72/100 4. 5/10 5. 67/100 6. 80/100
7. 77/100 8. 25/100 9. 60/100 10. 99/100 11. 13/100 12. 1/10

Page 10

1. 0.16	2. 0.32	3. 0.20	4. 0.6	5. 0.55	6. 0.2	7. 0.17
8. 0.04	9. 0.25	10. 0.67	11. 0.77	12. 0.4	13. 0.6	14. 0.32
						15. 0.33

Page 11

1. 0.13	2. 0.89	3. 0.50	4. 0.8	5. 0.06	6. 0.7	7. 0.11
8. 0.09	9. 0.75	10. 0.33	11. 0.98	12. 0.1	13. 0.4	14. 0.77
15. 0.67						

Page 12

1. 3.4 2. 1.2 3. 7.8 4. 27.6 5. 72.0 6. 8.4 7. 0.5 8. 100.0 9. 0.2
10. 3.3 11. 6.7 12. 12.2 13. 7.7 14. 0.2 15. 9.1 16. 5.7 17. 1.2 18. 3.0

Answers cont.**Page 13**

1. 2.7 **2.** 55.6 **3.** 0.1 **4.** 31.3 **5.** 72.8 **6.** 1.1 **7.** 0.5 **8.** 4.0 **9.** 0.1
10. 2.7 **11.** 66.7 **12.** 54.5 **13.** 6.9 **14.** 0.6 **15.** 10.0 **16.** 2.6 **17.** 5.3 **18.** 7.4

Page 14

1. 0.111111 0.11 **2.** 0.222222 0.22 **3.** 0.333333 0.33 **4.** 0.444444 0.44
5. 0.555555 0.56 **6.** 0.666666 0.67 **7.** 0.777777 0.78 **8.** 0.888888 0.89 **9.** 1

Page 15

1. £10.56 **2.** 0.31m or 31 cm **3.** 78 boxes **4.** 972 boxes
5. 4 **6.** 33.33 m **7.** 5 **8.** 35