ROUND TO DECIMAL PLACES

BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

KEY IDEA

6.43 is nearer to 6.4 than to 6.5, so 6.43 rounded to 1 decimal place is 6.4

1 decimal place means to the nearest tenth.



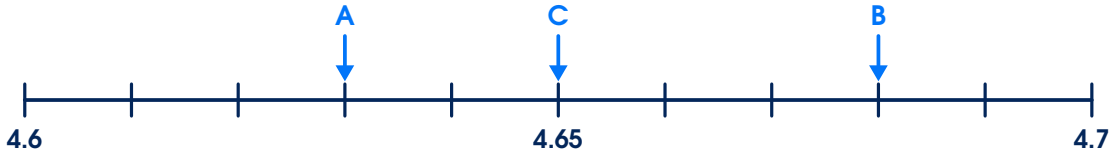
1 Which two tenths does each number lie between?

a) **3.47** lies between ☐ and ☐

b) **0.82** lies between ☐ and ☐

c) **6.05** lies between ☐ and ☐

2 Use the number line to round each number to 1 decimal place.



A: 4.63 → ☐ B: 4.68 → ☐ C: 4.65 → ☐

3 Round each number to 1 decimal place. Use the number line next to it to help.

a) **2.36** ☐



b) **5.81** ☐



c) **0.45** ☐



d) **9.72** ☐



4 Circle the numbers that round to 3.5 to 1 decimal place.

3.45 3.54 3.56 3.49 3.5 3.6

ROUND TO DECIMAL PLACES

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

5.634 lies between 5.63 and 5.64 and is nearer 5.63, so 5.634 = 5.63 (2 d.p.)

2 decimal places means to the nearest hundredth.



1 Complete the table.

NUMBER	1 DECIMAL PLACE	2 DECIMAL PLACES
4.127		
0.596		
12.345		

2 Round each number to 1 decimal place.

a) **7.43** ____ b) **2.98** ____

c) **0.06** ____ d) **15.25** ____

3 Round each number to 2 decimal places.

a) **2.718** ____ b) **0.304** ____

c) **9.995** ____ d) **4.055** ____

4 Is each statement true or false? Circle your answer.

a) 6.24 to 1 decimal place is 6.1 TRUE FALSE

b) 5.97 to 1 decimal place is 6.0 TRUE FALSE

c) 0.75 to 1 decimal place is 0.8 TRUE FALSE

d) 2.449 to 1 decimal place is 2.5 TRUE FALSE

ROUND TO DECIMAL PLACES

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

Find the two values the number lies between to the accuracy you need, and decide which it is nearer. Halfway values round to the greater one. Keep any zeros that show the accuracy: 2.98 to 1 d.p. is 3.0, not 3

FLUENCY

1 Complete the table.

NUMBER	1 D.P.	2 D.P.	3 D.P.
3.14159			
0.08546			
19.9967			

2 Round each calculator display to the accuracy given.

a) 22 ÷ 7 = 3.142857143 to 2 d.p. ____

b) 10 ÷ 3 = 3.333333333 to 1 d.p. ____

c) 5 ÷ 6 = 0.833333333 to 3 d.p. ____

REASONING

3 A number rounds to 4.7 to 1 decimal place.

a) What is the smallest number with 2 decimal places it could be? ____

b) What is the greatest number with 2 decimal places it could be? ____

4 Rob rounds 6.95 to 1 decimal place and writes 7. Explain why his answer should be written as 7.0

ROUND TO DECIMAL PLACES

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

If it is sometimes true, give an example of when it is true and when it is not.

a) Rounding to 1 d.p. gives a non-zero tenths digit. ALWAYS SOMETIMES NEVER

b) Rounding to 1 d.p. or to an integer gives equal values. ALWAYS SOMETIMES NEVER

c) Two numbers that round to 0.4 differ by less than 0.1 ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 Which digits could go in each box? Give all the possible digits.

a) **3.** ☐ **7** rounds to 3.5 to 1 d.p. Digit(s): ☐

b) ☐ **.95** rounds to 5.0 to 1 d.p. Digit(s): ☐

c) **0.6** ☐ rounds to 0.6 to 1 d.p. Digit(s): ☐

3 The length of a pencil is 14.6 cm to 1 decimal place.

a) What is the shortest the pencil could be? ☐

b) Ben says the pencil could be 14.65 cm long. Is he right? Explain.

★ CHALLENGE FOR ALL

4 Who am I?

- I have 3 decimal places. To 1 d.p. I am 8.3 and to 2 d.p. I am 8.25
- My thousandths digit is odd. The sum of my digits is 18.

a) What number am I? ☐

b) How many numbers with 3 d.p. round to both 8.3 and 8.25? ☐

ROUND TO DECIMAL PLACES

ANSWERS

BUILDING BLOCKS

1 a) 3.4 and 3.5 · b) 0.8 and 0.9 · c) 6.0 and 6.1

2 A: 4.63 → 4.6 · B: 4.68 → 4.7 · C: 4.65 → 4.7

3 a) 2.4 · b) 5.8 · c) 0.5 · d) 9.7

4 3.45, 3.54, 3.49 and 3.5

SUPPORT

1 4.127: 4.1, 4.13 · 0.596: 0.6, 0.60 · 12.345: 12.3, 12.35

2 a) 7.4 · b) 3.0 · c) 0.1 · d) 15.3

3 a) 2.72 · b) 0.30 · c) 10.00 · d) 4.06

4 a) False (6.2) · b) True · c) True · d) False (2.4: look only at the hundredths digit)

CORE

1 3.14159: 3.1, 3.14, 3.142 · 0.08546: 0.1, 0.09, 0.085 · 19.9967: 20.0, 20.00, 19.997

2 a) 3.14 · b) 3.3 · c) 0.833

3 a) 4.65 · b) 4.74

4 Rounding to 1 d.p. means the answer shows one decimal place. 6.95 lies between 6.9 and 7.0 and halfway values round up, so the answer is 7.0; the zero shows it is accurate to 1 d.p.

GREATER DEPTH

1 a) Sometimes, e.g. 3.42 → 3.4 but 3.04 → 3.0 · b) Sometimes, e.g. 3.96 → 4.0 and 4, but 3.6 → 3.6 and 4 · c) Always (both lie from 0.35 up to, but not including, 0.45)

2 a) 4 · b) 4 · c) 0, 1, 2, 3 or 4

3 a) 14.55 cm · b) No: 14.65 cm rounds to 14.7 cm (halfway rounds up), so the pencil is less than 14.65 cm

★ a) 8.253 · b) 5 (8.250, 8.251, 8.252, 8.253, 8.254)