

Name _____

Date _____

3.2 Rounding — worksheet

Round numbers to a given number of decimal places or significant figures, and choose a sensible degree of accuracy. · 56 questions · Show your working.

Remember

- The method is the **same for every degree of accuracy**.
- Find the digit in the rounding position, then look at the digit **immediately to its right**.
- If that digit is **5 or more**, increase the rounding digit by 1.
- If it is **less than 5**, leave the rounding digit as it is.
- Then drop everything after the rounding position.
- Rounding up can carry: 9.999 to 2 d.p. is 10.
- For a division, work out **one more decimal place** than you need, then round.
- Round once, from the original number — rounding in stages can give the wrong answer.

A · Fluency — Round to decimal places and significant figures.

- 1 Round **4.27** to 1 decimal place.

- 2 Round **8.53** to 1 decimal place.

- 3 Round **12.96** to 1 decimal place.

- 4 Round **0.48** to 1 decimal place.

- 5 Round **7.05** to 1 decimal place.

- 6 Round **19.99** to 1 decimal place.

- 7 Round **3.146** to 2 decimal places.

- 8 Round **0.0752** to 2 decimal places.

- 9 Round **6.895** to 2 decimal places.

- 10 Round **14.203** to 2 decimal places.

- 11 Round **2.675** to 2 decimal places.

- 12 Round **9.999** to 2 decimal places.

13 Round **5.4** to the nearest whole number.

14 Round **8.5** to the nearest whole number.

15 Round **149.5** to the nearest whole number.

16 Round **0.62** to the nearest whole number.

17 Round **23.49** to the nearest whole number.

18 Round **99.7** to the nearest whole number.

19 Round **45678** to 3 significant figures.

20 Round **0.04567** to 2 significant figures.

21 Round **2.349** to 2 significant figures.

22 Round **8721** to 2 significant figures.

23 Round **0.006812** to 3 significant figures.

24 Round **19850** to 3 significant figures.

B · Reasoning — Which digit decides, and what could the original number have been.

25 What does “round to 2 decimal places” tell you?

- ☐ Keep 2 digits altogether
- ☐ Keep 2 digits after the decimal point
- ☐ Keep 2 digits before the decimal point
- ☐ Multiply by 100

26 When you round, which digit do you look at?

- ☐ The last digit of the number
- ☐ The digit in the rounding position
- ☐ The digit immediately to the right of the rounding position
- ☐ The first digit

27 Does 7.45 round to 7.5 to 1 decimal place?

- ☐ Yes
- ☐ No

28 Does 7.44 round to 7.5 to 1 decimal place?

- ☐ Yes
- ☐ No

29 Round 9.999 to 2 decimal places.

30 Round 19.99 to 1 decimal place.

31 A number rounds to 4.3 to 1 decimal place. Which of these could it be?

- ☐ 4.24
- ☐ 4.35
- ☐ 4.28
- ☐ 4.41

32 What is the smallest number that rounds to 8 to the nearest whole number?

33 What is the largest whole number of tenths that rounds to 8 to the nearest whole number? Give the decimal.

34 Why do we round?

- ☐ To make numbers wrong
- ☐ To give an answer to a sensible degree of accuracy
- ☐ To make numbers bigger
- ☐ Because calculators cannot show every digit

35 Work out $8.46 \div 7$ and give your answer to 2 decimal places.

36 Work out $7.62 \div 5$ and give your answer to 1 decimal place.

C · Challenge — Boundaries, carrying and rounded divisions.

37 A number rounds to 6.7 to 1 decimal place. What is the smallest it could be?

38 A number rounds to 250 to the nearest ten. What is the largest whole number it could be?

39 A number rounds to 5 to the nearest whole number and to 5.0 to 1 decimal place. What is the smallest it could be?

40 Round 2.675 to 2 decimal places.

41 Work out $9.428 \div 7$ to 2 decimal places.

42 Work out $8.6 \div 13$ to 3 decimal places.

- 43** Zara rounds 3.4999 to 1 decimal place by first rounding to 3 d.p., then 2 d.p., then 1 d.p. What answer does she get, and is it right?
- ☐ 3.5, and it is correct
 - ☐ 3.5, but the method is wrong
 - ☐ 3.4, and it is correct
 - ☐ 3.4, but the method is wrong

- 44** The population of a town is 19 850. Round it to 3 significant figures.
- _____

D · Word problems — Sensible accuracy in real measurements.

- 45** A shop bill comes to \$23.478. How much is paid, to the nearest cent (2 decimal places)? Give the number of dollars.
- _____
- 46** A plank is 2.346 m long. Give its length to 1 decimal place, in metres.
- _____
- 47** A race time is 12.968 seconds. Give it to 2 decimal places.
- _____
- 48** A bag of apples weighs 1.4499 kg. Give the mass to 1 decimal place, in kg.
- _____
- 49** Three friends share \$50 equally. How much does each get, to the nearest cent? Give the number of dollars.
- _____
- 50** A car travels 100 km on 7 litres of fuel. How many kilometres per litre, to 1 decimal place?
- _____
- 51** A field is 38.6 m by 24.3 m. Work out its area and give the answer to the nearest whole square metre.
- _____
- 52** A rope 12 m long is cut into 7 equal pieces. How long is each piece, to 2 decimal places, in metres?
- _____
- 53** A recipe needs 0.375 kg of flour per cake. How much for 4 cakes, to 1 decimal place, in kg?
- _____
- 54** A phone costs \$499.99. Round it to the nearest hundred dollars.
- _____
- 55** A journey takes 2.5 hours at 63 km/h. How far is it, to the nearest km?
- _____
- 56** A tank holds 8.46 litres. It is shared equally into 7 bottles. How much is in each bottle, to 2 decimal places, in litres?
- _____