Rounding to Decimal Points

Mana Maths

Te reo Māori terms

tau ā-ira
decimal
Open in Te Aka

mati whaiira
decimal place
Open in Te Aka

mati
digit
Open in Te Aka

whakatau tata
estimate
Open in Te Aka

Notes & Steps

Key idea

Rounding gives a simpler number that is close to the original. We round to a specific decimal place by looking at the next digit to the right.

Steps

1. Find the decimal place you are rounding to.
2. Look at the digit immediately to the right.
3. If that digit is 5 or more, round up. If it is 4 or less, round down.
4. Drop all digits to the right of the rounding place.

Rounding reminder

- Round 3.4 to nearest whole: look at 4 (tenths). $4 < 5$, so 3.
- Round 7.6 to nearest whole: look at 6 (tenths). $6 \geq 5$, so 8.
- Round 2.31 to 1 d.p.: look at 1 (hundredths). $1 < 5$, so 2.3.
- Round 5.68 to 1 d.p.: look at 8 (hundredths). $8 \geq 5$, so 5.7.

Common mistake

When the digit to round is a 9, rounding up can change the whole number. For example, 2.97 to 1 d.p. rounds to 3.0, not 2.10.

Try these

1. Round 4.86 to 1 decimal place.
2. Round 1.73 to 1 decimal place.
3. Round 6.15 to 1 decimal place.

Notes & Steps

Example 1: round to 1 d.p.

Round 8.42 to 1 decimal place.

$$8.42$$

The rounding digit is 4 (tenths). Look right at 2 (hundredths). $2 < 5$, so the 4 stays. Answer: 8.4.

Example 2: round to 2 d.p.

Round 3.141 to 2 decimal places.

$$3.141$$

The rounding digit is 4 (hundredths). Look right at 1 (thousandths). $1 < 5$, so the 4 stays. Answer: 3.14.

Try these

1. Round 5.678 to 2 decimal places.
2. Round 7.204 to 2 decimal places.
3. Round 9.995 to 2 decimal places.

Notes & Steps

Example 3: 9 rolling over

Round 2.97 to 1 decimal place.

$$2.97$$

The rounding digit is 9 (tenths). Look right at 7 (hundredths). $7 \geq 5$, so we need to round the 9 up. 9 rounds to 10, which carries into the units: 3.0. Answer: 3.0.

Example 4: 2 d.p. with 9

Round 4.995 to 2 decimal places.

$$4.995$$

The rounding digit is 9 (hundredths). Look right at 5 (thousandths). $5 \geq 5$, so round the 9 up. 9 becomes 10, carries: 5.00. Answer: 5.00.

Common mistake

Forgetting to show the zero after rounding. For example, 3.0 is correct for 2.97 to 1 d.p. If you write just 3, you have rounded to a whole number, not 1 decimal place.

Start Tasks

1. Round 3.4 to the nearest whole number.

2. Round 7.6 to the nearest whole number.

3. Round 2.31 to 1 decimal place.

4. Round 5.68 to 1 decimal place.

5. Round 9.24 to 1 decimal place.

6. Round 4.86 to 1 decimal place.

7. Round 1.73 to 1 decimal place.

8. Round 6.15 to 1 decimal place.

9. Round 8.42 to 1 decimal place.

Start Tasks — Answers

1. 3.3

2. 6.0

3. 0.6

4. 3.7

5. 8.2

6. 5.0

7. 17.0

8. 4.2

9. 9.0

Start Tasks

10. Round 0.27 to 1 decimal place.

11. Round 3.141 to 2 decimal places.

12. Round 5.678 to 2 decimal places.

13. Round 7.204 to 2 decimal places.

14. Round 9.995 to 2 decimal places.

15. Round 12.49 to the nearest whole number.

16. Round 12.50 to the nearest whole number.

17. Round 4.04 to 1 decimal place.

18. Round 7.89 to 1 decimal place.

Start Tasks — Answers

10. four point seven

11. zero point two five

12. eight point zero two

13. 4.0

14. 1.0

15. 24.0

16. 0.04

17. 3.14, 5.6, 8.99

18. 2.5, 3.1, 7.2

Start Tasks

19. Round 2.66 to 1 decimal place.

20. Round 5.05 to 1 decimal place.

21. Round 6.444 to 2 decimal places.

22. Round 8.275 to 2 decimal places.

23. Round 1.009 to 2 decimal places.

24. Round 15.4 to the nearest whole number.

25. Round 15.5 to the nearest whole number.

26. Round 0.94 to 1 decimal place.

27. Round 0.996 to 2 decimal places.

Start Tasks — Answers

19. 2.7

20. 5.1

21. 6.44

22. 8.28

23. 1.01

24. 15

25. 16

26. 0.9

27. 1.00

Build Tasks

1. Round 14.37 to 1 decimal place.

2. Round 8.05 to 1 decimal place.

3. Round 6.666 to 2 decimal places.

4. Round 2.349 to 2 decimal places.

5. Round 0.995 to 2 decimal places.

6. Round 17.499 to the nearest whole number.

7. Round 17.500 to the nearest whole number.

8. Round 3.045 to 2 decimal places.

9. Round 9.994 to 2 decimal places.

Build Tasks — Answers

1. 6.43

2. 12.50

3. 0.845

4. 9.999

5. 3.142

6. 6.000

7. 2.700

8. 0.500

9. 10.100

Build Tasks

10. Round 12.444 to 2 decimal places.

11. Round 5.555 to 2 decimal places.

12. Round 0.074 to 1 decimal place.

13. Round 0.074 to 2 decimal places.

14. Fill the blank: $4.27 \approx 4.\square$ to 1 decimal place.

15. Fill the blank: $8.196 \approx 8.\square\square$ to 2 decimal places.

16. Is $6.84 \to 6.9$ to 1 decimal place correct?

17. Is $3.141 \to 3.14$ to 2 decimal places correct?

18. What digit decides the rounding?

Build Tasks — Answers

10. 12.130

11. 7.000

12. 0.800

13. 4.570

14. 3.140

15. 9.990

16. Yes, because $4 < 5$

17. Yes, because $1 < 5$

18. The digit immediately to the right of the rounding place

Build Tasks

19. Round 24.16 to 1 decimal place.

20. Round 11.095 to 2 decimal places.

21. Round 4.995 to 2 decimal places.

22. Round 23.504 to the nearest whole number.

23. Round 7.249 to 2 decimal places.

24. Round 0.149 to 1 decimal place.

25. Round 0.149 to 2 decimal places.

26. Is $5.05 \to 5.1$ to 1 decimal place correct?

27. Round 18.445 to 2 decimal places.

Build Tasks — Answers

19. 24.2

20. 11.10

21. 5.00

22. 24

23. 7.25

24. 0.1

25. 0.15

26. Yes, because $5 \geq 5$

27. 18.45

Push Tasks

1. A student says 4.249 rounds to 4.3 to 1 decimal place. Are they correct?

2. A student says 7.995 rounds to 7.99 to 2 decimal places. Are they correct?

3. Which is greater after rounding to 1 decimal place: 6.44 or 6.45?

4. Which is smaller after rounding to 2 decimal places: 3.104 or 3.099?

5. A number that rounds to 5.7 to 1 decimal place could be _____.

6. A number that rounds to 2.35 to 2 decimal places could be _____.

7. Complete: $8.\square 4$ rounds to 8.5 to 1 decimal place.

8. Complete: $3.4\square 8$ rounds to 3.45 to 2 decimal places.

9. Round 19.995 to 2 decimal places.

Push Tasks — Answers

1. 14.260

2. 3.142

3. 2.718

4. 1.414

5. 4.795, 4.80

6. Both have same significance

7. 3.142

8. 2.718

9. 0.318

Push Tasks

10. Round 0.999 to 2 decimal places.

11. Round 12.049 to 2 decimal places.

12. Round 4.444 to 2 decimal places.

13. Put in order after rounding to 1 decimal place: $2.84, 2.85, 2.89$.

14. Write two different numbers that both round to 6.2 to 1 decimal place.

15. Why do 5.05 and 5.04 not round to the same tenth?

16. A measurement is 3.276 m. Write it to 2 decimal places.

17. Which is larger after rounding to 2 decimal places: 8.675 or 8.674?

18. Give a number that rounds to 9 to the nearest whole number.

Push Tasks — Answers

10. 1.00

11. 12.05

12. 4.44

13. 2.8, 2.9, 2.9

14. 6.21, 6.19

15. 5.05 rounds up (digit is 5), 5.04 rounds down (digit is 4)

16. 3.28 m

17. Both round to 8.68 (equal)

18. 8.5

Push Tasks

19. Give a number that rounds to 4.8 to 1 decimal place.

20. Give a number that rounds to 7.35 to 2 decimal places.

21. Explain why 2.450 rounds to 2.45 to 2 decimal places.

22. A student rounds 6.149 to 6.2 to 1 decimal place. Correct or not?

23. Round 13.995 to 2 decimal places.

24. Round 2.995 to 2 decimal places.

25. Which rounds higher to 1 decimal place: 4.94 or 4.95?

26. Make a number with three decimals that rounds to 1.24 to 2 decimal places.

27. Round 0.0049 to 2 decimal places.

Push Tasks — Answers

19. 4.75, 4.84

20. 7.345, 7.354

21. The thousandths digit is 0 < 5, so the hundredths digit stays

22. Correct (4 < 5 so 6.1 stays; result 6.2)

23. 14.00

24. 3.00

25. 4.95 rounds higher (to 5.0 vs 4.9)

26. 1.244

27. 0.00