



Converting currency using an exchange rate, and working with ratios

Mana Maths

Te reo Māori terms



ōwehenga

ratio

Open in Te Aka

tau ā-ira

decimal

Open in Te Aka

whakatau tata

estimate

Open in Te Aka

uara

number value

Open in Te Aka

Exchange Rates - Notes and Steps



Key idea

An exchange rate says what 1 unit of money is worth in another currency.

Multiply to go into foreign money; **divide** to come back.

Convert to foreign

1 NZD = 0.80 EUR.

NZD 75 $\rightarrow$ $75 \times 0.80 =$ EUR 60.

Convert back to NZD

1 NZD = 110 JPY.

JPY 3300 $\rightarrow$ $3300 \div 110 =$ NZD 30.

Common mistake

Using the rate the wrong way.

1 NZD = 0.60 USD means NZD

100 = USD 60, **not** 160.

Sharing in a Ratio - Notes and Steps



Key idea

To share a total in a ratio: **add** the parts, **divide** the total by the number of parts, then **multiply** for each share.

Share in a ratio

Share 35 in 2 : 5.

Parts $2+5 = 7$; each part $35 \div 7 = 5$.

Shares: $2 \times 5 = 10$ and $5 \times 5 = 25$.

Recipe ratio

Juice : water = 1 : 4 in 2.5 L.

Parts $1 + 4 = 5$; each part $2.5 \div 5 = 0.5$ L.

Juice is 1 part = 0.5 L.

Common mistake

Add **all** the parts first. In 2 : 5 the total is 7 parts, not 5.



Start Tasks



1. A rate is 1 NZD = 0.90 AUD. Convert NZD 10 to AUD.

2. A rate is 1 NZD = 0.90 AUD. Convert NZD 20 to AUD.

3. A rate is 1 NZD = 0.90 AUD. Convert NZD 50 to AUD.

4. A rate is 1 NZD = 0.60 GBP. Convert NZD 10 to GBP.

5. A rate is 1 NZD = 0.60 GBP. Convert NZD 30 to GBP.

6. A rate is 1 NZD = 110 JPY. Convert NZD 4 to JPY.

7. A rate is 1 NZD = 110 JPY. Convert NZD 8 to JPY.

8. A rate is 1 NZD = 0.50 USD. Convert NZD 12 to USD.

9. A rate is 1 NZD = 0.50 USD. Convert NZD 40 to USD.

Start Tasks — Answers



1.
AUD 9

2.
AUD 18

3.
AUD 45

4.
GBP 6

5.
GBP 18

6.
JPY 440

7.
JPY 880

8.
USD 6

9.
USD 20

Start Tasks



10. Write the ratio of red to blue marbles if there are 3 red and 5 blue.

11. Write the ratio of girls to boys if there are 7 girls and 4 boys.

12. Write the ratio of cats to dogs if there are 2 cats and 6 dogs.

13. Simplify the ratio
 $4 : 8$.

14. Simplify the ratio
 $6 : 9$.

15. Simplify the ratio
 $10 : 15$.

16. Simplify the ratio
 $8 : 12$.

17. Simplify the ratio
 $14 : 21$.

18. Simplify the ratio
 $9 : 3$.

Start Tasks — Answers



10.

3:5

11.

7:4

12.

2:6

13.

1:2

14.

2:3

15.

2:3

16.

2:3

17.

2:3

18.

3:1

Start Tasks



19. If the ratio of apples to oranges is $2 : 3$, how many oranges go with 4 apples?

20. If the ratio of pens to pencils is $1 : 4$, how many pencils go with 3 pens?

21. If the ratio of cats to dogs is $3 : 2$, how many dogs go with 9 cats?

22. If the ratio of flour to sugar is $5 : 2$, how much sugar goes with 10 cups of flour?

23. A rate is $1 \text{ NZD} = 0.80 \text{ EUR}$. Convert NZD 25 to EUR.

24. A rate is $1 \text{ NZD} = 0.80 \text{ EUR}$. Convert NZD 75 to EUR.

25. A rate is $1 \text{ NZD} = 100 \text{ JPY}$. Convert NZD 15 to JPY.

26. A rate is $1 \text{ NZD} = 2.5 \text{ FJD}$. Convert NZD 8 to FJD.

27. A rate is $1 \text{ NZD} = 2.5 \text{ FJD}$. Convert NZD 18 to FJD.

Start Tasks — Answers



19.

6 oranges

20.

12 pencils

21.

6 dogs

22.

4 cups sugar

23.

EUR 20

24.

EUR 60

25.

JPY 1500

26.

FJD 20

27.

FJD 45

Build Tasks



1. A rate is 1 NZD = 0.92 AUD. Convert NZD 135 to AUD.

2. A rate is 1 NZD = 0.57 USD. Convert NZD 240 to USD.

3. A rate is 1 NZD = 0.63 GBP. Convert NZD 88 to GBP.

4. A rate is 1 NZD = 108 JPY. Convert NZD 46 to JPY.

5. A rate is 1 NZD = 0.80 EUR. Convert NZD 125 to EUR.

6. A rate is 1 NZD = 2.84 WST. Convert NZD 31 to WST.

7. A rate is 1 NZD = 0.59 USD. Convert USD 47.20 back to NZD.

8. A rate is 1 NZD = 110 JPY. Convert JPY 3300 back to NZD.

9. A rate is 1 NZD = 0.50 GBP. Convert GBP 75 back to NZD.

Build Tasks — Answers



1.
AUD 124.20

2.
USD 136.80

3.
GBP 55.44

4.
JPY 4968

5.
EUR 100

6.
WST 88.04

7.
NZD 80

8.
NZD 30

9.
NZD 150

Build Tasks



10. Share 24 lollies in the ratio 1 : 3. Give both amounts.

11. Share 35 stickers in the ratio 2 : 5. Give both amounts.

12. Share 42 marbles in the ratio 4 : 3. Give both amounts.

13. A recipe uses flour and sugar in the ratio 5 : 2. If there are 15 cups of flour, how much sugar is needed?

14. Blue paint and white paint are mixed in the ratio 3 : 4. If 12 L of blue paint is used, how much white paint

15. The ratio of adults to children is 7 : 5. If there are 35 adults, how many children are there?

16. The ratio of cats to dogs is 3 : 8. There are 24 dogs. How many cats are there?

17. The ratio of boys to girls is 4 : 9. There are 36 girls. How many boys are there?

18. The ratio of red beads to green beads is 5 : 6. There are 30 red beads. How many

Build Tasks — Answers



10.

6 and 18

11.

10 and 25

12.

24 and 18

13.

6 cups sugar

14.

16 L white

15.

25 children

16.

9 cats

17.

16 boys

18.

36 green

Build Tasks



19. A phone costs USD 180. If $1 \text{ NZD} = 0.60 \text{ USD}$, how much is the phone in NZD?

20. A backpack costs EUR 96. If $1 \text{ NZD} = 0.80 \text{ EUR}$, how much is the backpack in NZD?

21. A concert ticket costs AUD 138. If $1 \text{ NZD} = 0.92 \text{ AUD}$, how much is the ticket in NZD?

22. A class has boys:girls = $3 : 5$. There are 32 students altogether. How many boys are there?

23. A bag has red:blue:yellow counters = $2 : 3 : 5$. There are 40 counters altogether. How many

24. A fruit drink has juice:water = $1 : 4$. How much juice is in 2.5 L of drink?

25. A shirt costs NZD 72. At $1 \text{ NZD} = 2.5 \text{ FJD}$, what is the price in FJD?

26. A skateboard costs JPY 7700. At $1 \text{ NZD} = 110 \text{ JPY}$, what is the price in NZD?

27. In a ratio $4 : 7$, the larger amount is 56. Find the smaller amount.

Build Tasks — Answers



19.
NZD 300

20.
NZD 120

21.
NZD 150

22.
12 boys

23.
20 yellow

24.
0.5 L juice

25.
FJD 180

26.
NZD 70

27.
32

Push Tasks



1. A phone costs USD 249. If $1 \text{ NZD} = 0.61 \text{ USD}$, find the cost in NZD. Round to the nearest cent.

2. A hotel costs EUR 387. If $1 \text{ NZD} = 0.82 \text{ EUR}$, find the cost in NZD. Round to the nearest cent.

3. A theme park ticket costs AUD 156. If $1 \text{ NZD} = 0.94 \text{ AUD}$, find the cost in NZD. Round to the nearest cent.

4. A concert costs JPY 13,750. If $1 \text{ NZD} = 110 \text{ JPY}$, find the cost in NZD.

5. A holiday budget is NZD 2400. If $1 \text{ NZD} = 0.58 \text{ USD}$, how many USD is that?

6. A fare is FJD 180. If $1 \text{ NZD} = 2.4 \text{ FJD}$, how many NZD is that?

7. A travel card charges 2% commission after conversion. Convert NZD 500 to USD at 1

8. A bank gives $1 \text{ NZD} = 0.79 \text{ EUR}$, but a kiosk gives $1 \text{ NZD} = 0.76 \text{ EUR}$. For NZD 300, how

9. A rate changes from $1 \text{ NZD} = 0.57 \text{ USD}$ to $1 \text{ NZD} = 0.62 \text{ USD}$. For NZD 400, find the

Push Tasks — Answers



1.
NZD 408.20

2.
NZD 471.95

3.
NZD 165.96

4.
NZD 125

5.
USD 1392

6.
NZD 75

7.
USD 294

8.
EUR 9 more

9.
USD 20 more

Push Tasks



10. A drink mix has juice:water = 3 : 5. How much water is needed to make 2.4 L of mix?

11. A class has boys:girls = 5 : 7. If there are 36 students, how many girls are there?

12. The ratio red:blue:green is 2 : 3 : 4. If there are 27 counters altogether, how many are blue?

13. A recipe uses flour:sugar:butter = 6 : 2 : 1. If 450 g of flour is used, find the amount of sugar.

14. A map scale is 1 : 50,000. If two towns are 8 cm apart on the map, what is the real distance in km?

15. A bag contains red:blue counters = 4 : 9. If there are 91 counters in total, how many are red?

16. Divide NZD 840 between Ana and Moana in the ratio 3 : 4. Find both shares.

17. A sports team has wins:losses = 7 : 3. If they played 50 games, how many losses did

18. In a ratio 5 : 8, the difference between the amounts is 39. Find both amounts.

Push Tasks — Answers



10.

1.5 L water

11.

21 girls

12.

9 blue

13.

150 g sugar

14.

4 km

15.

28 red

16.

NZD 360 and NZD 480

17.

15 losses

18.

65 and 104

Push Tasks



19. A traveller has NZD 900. First convert to USD at $1 \text{ NZD} = 0.60 \text{ USD}$, then to JPY at $1 \text{ USD} = 150 \text{ JPY}$. How

20. A store price is USD 85. GST of 15% is added after converting to NZD. If $1 \text{ NZD} = 0.50 \text{ USD}$, find the final NZD

21. A plane ticket is EUR 640. The bank charges a fixed NZD 12 fee after conversion. If $1 \text{ NZD} = 0.80 \text{ EUR}$, find

22. A travel budget is split flights:food:activities = $5 : 3 : 2$. If the total budget is NZD 2500,

23. A charity divides money local:regional:global = $4 : 3 : 5$. If regional gets NZD 360, how

24. A parcel weighs red:blue:green boxes = $2 : 2 : 1$ by count. There are 45 boxes. How many are blue?

25. At $1 \text{ NZD} = 0.58 \text{ USD}$, how many NZD are needed to receive exactly USD 200?

26. A bank advertises $1 \text{ NZD} = 0.61 \text{ USD}$, but gives only 0.60 USD after fees. For NZD 750,

27. A recipe ratio is milk:water = $7 : 1$. If 3.2 L of mixture is made, how much milk

Push Tasks — Answers



19.

JPY 81,000

20.

NZD 195.50

21.

NZD 812

22.

NZD 750 for food

23.

NZD 600

24.

18 blue

25.

NZD 344.83

26.

USD 7.50 lost

27.

2.8 L milk