



Budgets

Mana Maths

Te reo Māori terms



rahinga

quantity/amount

Open in Te Aka

ōrau

percentage

Open in Te Aka

tau ā-ira

decimal

Open in Te Aka

whakatau tata

estimate

Open in Te Aka

Budgets - Money Left



Key idea



A budget plans money coming in and going out.

Money left = income – expenses.

Add all the expenses first, then subtract.

Example



Budget \$240; food \$85, transport \$42.

$85 + 42 = 127$, so $240 - 127 = \$113$ is left.

Common mistake

Keep the period the same — do not mix weekly and monthly amounts.



= copy this into your book. Boxes without a pencil are just to read.

Repeated Spending



Key idea

A cost that repeats every day (or week) is

cost $\times$ **number of times**.

Example

Bus is \$5.50 each day for 5 days:

$$5.50 \times 5 = 27.50.$$

So the week's travel is \$27.50.

Common mistake

Match the period to the question.

A daily cost times 5 days gives the **weekly** cost, not the daily one.



= copy this into your book. Boxes without a pencil are just to read.

Discounts and GST



Key idea

Find the percentage amount first.

A **discount** subtracts it; **GST** adds it.

Discount example

Jacket \$80, 25% off:

25% of 80 = 20, so $80 - 20 = \$60$.

Common mistake

Do not stop at the percentage amount.

Connect it back: **subtract** it for a discount, **add** it for GST.

 = **copy this into your book.** Boxes without a pencil are just to read.

Start Tasks



Calculate amounts spent, saved, or remaining in each budget.

1. Income \$80, expenses \$35. How much is left?

2. Income \$120, expenses \$45. Find the amount left.

3. Add these expenses: \$12, \$9, \$15.

4. Budget \$90, expenses \$64. Is it enough? By how much?

Start Tasks — Answers



1. Income \$80, expenses \$35. How much is left?

Solution

$$\begin{aligned} \$80 - \$35 \\ = \$45 \end{aligned}$$

2. Income \$120, expenses \$45. Find the amount left.

Solution

$$\begin{aligned} \$120 - \$45 \\ = \$75 \end{aligned}$$

3. Add these expenses: \$12, \$9, \$15.

Solution

$$\begin{aligned} \$12 + \$9 + \$15 \\ = \$36 \end{aligned}$$

4. Budget \$90, expenses \$64. Is it enough? By how much?

Solution

$$\begin{aligned} \$90 - \$64 &= \$26 \\ \text{Yes} - \$26 \text{ to spare} \end{aligned}$$

Start Tasks



Calculate amounts spent, saved, or remaining in each budget.

5. Budget \$70, expenses \$22 and \$31. How much remains?

6. Budget \$60, expenses \$19, \$14, and \$11. How much remains?

7. Bus fare \$4 a day for 5 days. Find the weekly cost.

8. Save \$15 each week. How much is saved in 6 weeks?

Start Tasks — Answers



5. Budget \$70, expenses \$22 and \$31. How much remains?

Solution

$$\begin{aligned} & \$70 - (\$22 + \$31) \\ & = \$70 - \$53 = \$17 \end{aligned}$$

6. Budget \$60, expenses \$19, \$14, and \$11. How much remains?

Solution

$$\begin{aligned} & \$60 - (\$19 + \$14 + \$11) \\ & = \$60 - \$44 = \$16 \end{aligned}$$

7. Bus fare \$4 a day for 5 days. Find the weekly cost.

Solution

$$\begin{aligned} & \$4 \times 5 \\ & = \$20 \end{aligned}$$

8. Save \$15 each week. How much is saved in 6 weeks?

Solution

$$\begin{aligned} & \$15 \times 6 \\ & = \$90 \end{aligned}$$

Start Tasks



Calculate amounts spent, saved, or remaining in each budget.

9. Budget \$200 for 4 weeks, shared equally. How much per week?

10. Savings goal \$100, already saved \$35. How much more is needed?

11. Trip cost \$180. Save \$20 each week. How many weeks are needed?

12. Budget \$75. Spend \$28 on food and \$19 on travel. How much is left?

Start Tasks — Answers



9. Budget \$200 for 4 weeks, shared equally. How much per week?

Solution

$$\begin{aligned} &\$200 \div 4 \\ &= \$50 \text{ per week} \end{aligned}$$

11. Trip cost \$180. Save \$20 each week. How many weeks are needed?

Solution

$$\begin{aligned} &\$180 \div \$20 \\ &= 9 \text{ weeks} \end{aligned}$$

10. Savings goal \$100, already saved \$35. How much more is needed?

Solution

$$\begin{aligned} &\$100 - \$35 \\ &= \$65 \end{aligned}$$

12. Budget \$75. Spend \$28 on food and \$19 on travel. How much is left?

Solution

$$\begin{aligned} &\$75 - (\$28 + \$19) \\ &= \$75 - \$47 = \$28 \end{aligned}$$

Start Tasks



Calculate amounts spent, saved, or remaining in each budget.

13. You earn \$48 and spend \$29.
How much can be saved?

14. Budget \$140. Spend \$55 on food and \$48 on transport. How much remains?

15. Lunch budget \$50. Spend \$18.
How much remains?

16. Add these expenses: \$24, \$16, \$10.

Start Tasks — Answers



13. You earn \$48 and spend \$29.
How much can be saved?

Solution

$$\begin{aligned} \$48 - \$29 \\ = \$19 \end{aligned}$$

15. Lunch budget \$50. Spend \$18.
How much remains?

Solution

$$\begin{aligned} \$50 - \$18 \\ = \$32 \end{aligned}$$

14. Budget \$140. Spend \$55 on
food and \$48 on transport. How
much remains?

Solution

$$\begin{aligned} \$140 - (\$55 + \$48) \\ = \$140 - \$103 = \$37 \end{aligned}$$

16. Add these expenses: \$24, \$16,
\$10.

Solution

$$\begin{aligned} \$24 + \$16 + \$10 \\ = \$50 \end{aligned}$$

Build Tasks



Calculate amounts spent, saved, or remaining in each budget.

1. Weekly budget \$240. Food \$85 and transport \$42. How much is left?

2. Budget \$300. Rent \$180, power \$35, internet \$25. Find the amount left.

3. Camp budget \$540 for 6 students. How much per student?

4. Club budget \$360 for 8 weeks. How much per week?

Build Tasks — Answers



1. Weekly budget \$240. Food \$85 and transport \$42. How much is left?

Solution

$$\begin{aligned} & \$240 - (\$85 + \$42) \\ & = \$240 - \$127 = \$113 \end{aligned}$$

3. Camp budget \$540 for 6 students. How much per student?

Solution

$$\begin{aligned} & \$540 \div 6 \\ & = \$90 \text{ per student} \end{aligned}$$

2. Budget \$300. Rent \$180, power \$35, internet \$25. Find the amount left.

Solution

$$\begin{aligned} & \$300 - (\$180 + \$35 + \$25) \\ & = \$300 - \$240 = \$60 \end{aligned}$$

4. Club budget \$360 for 8 weeks. How much per week?

Solution

$$\begin{aligned} & \$360 \div 8 \\ & = \$45 \text{ per week} \end{aligned}$$

Build Tasks



Find a percentage of a budget, or the new amount after a percentage change.

5. Bus travel is \$5.50 a day for 5 days. Find the weekly cost.

6. A jacket costs \$80 and is discounted by 25%. Find the sale price.

7. An item costs \$120 before GST. Add 15% GST.

8. Clothes budget \$150. A \$180 item has a 20% discount. Is it within budget?

Build Tasks — Answers



5. Bus travel is \$5.50 a day for 5 days. Find the weekly cost.

Solution

$$\begin{aligned} \$5.50 \times 5 \\ = \$27.50 \end{aligned}$$

7. An item costs \$120 before GST. Add 15% GST.

Solution

$$\begin{aligned} \$120 \times 1.15 \\ = \$138 \end{aligned}$$

6. A jacket costs \$80 and is discounted by 25%. Find the sale price.

Solution

$$\begin{aligned} \$80 \times (1 - 0.25) \\ = \$80 \times 0.75 = \$60 \end{aligned}$$

8. Clothes budget \$150. A \$180 item has a 20% discount. Is it within budget?

Solution

$$\begin{aligned} \$180 \times 0.80 &= \$144 \\ \text{Yes — \$6 to spare} \end{aligned}$$

Build Tasks



Find a percentage of a budget, or the new amount after a percentage change.

9. A \$500 budget is split 40% food, 35% bills, 25% savings. How much goes to food?

10. A \$640 budget uses 15% for savings. How much is that?

11. Plan A costs \$12 a week. Plan B costs \$45 a month (4 weeks). Which is cheaper?

12. Monthly budget \$950. Rent \$420, food \$210, transport \$96. How much remains?

Build Tasks — Answers



9. A \$500 budget is split 40% food, 35% bills, 25% savings. How much goes to food?

Solution

$$\begin{aligned} \$500 \times 0.40 \\ = \$200 \end{aligned}$$

11. Plan A costs \$12 a week. Plan B costs \$45 a month (4 weeks). Which is cheaper?

Solution

$$\$12 \times 4 = \$48$$

Plan B cheaper — \$45 vs \$48

10. A \$640 budget uses 15% for savings. How much is that?

Solution

$$\begin{aligned} \$640 \times 0.15 \\ = \$96 \end{aligned}$$

12. Monthly budget \$950. Rent \$420, food \$210, transport \$96. How much remains?

Solution

$$\$420 + \$210 + \$96 = \$726$$

$$\$950 - \$726 = \$224$$

Build Tasks



Calculate amounts spent, saved, or remaining in each budget.

13. A person earns \$680 per fortnight and saves 25%. How much is saved?

14. Event budget \$900. Ticket sales are \$560 and sponsorship is \$175. How much more is needed?

15. Budget \$450. Expenses are \$120, \$95, \$70, and \$88. How much remains?

16. Income \$210. Spend \$58 on food and \$24 on travel. How much is saved?

Build Tasks — Answers



13. A person earns \$680 per fortnight and saves 25%. How much is saved?

Solution

$$\begin{aligned} \$680 \times 0.25 \\ = \$170 \end{aligned}$$

15. Budget \$450. Expenses are \$120, \$95, \$70, and \$88. How much remains?

Solution

$$\begin{aligned} \$120 + \$95 + \$70 + \$88 &= \$373 \\ \$450 - \$373 &= \$77 \end{aligned}$$

14. Event budget \$900. Ticket sales are \$560 and sponsorship is \$175. How much more is needed?

Solution

$$\begin{aligned} \$560 + \$175 &= \$735 \\ \$900 - \$735 &= \$165 \end{aligned}$$

16. Income \$210. Spend \$58 on food and \$24 on travel. How much is saved?

Solution

$$\begin{aligned} \$58 + \$24 &= \$82 \\ \$210 - \$82 &= \$128 \end{aligned}$$

Push Tasks



Find a percentage of a budget, or the new amount after a percentage change.

1. Weekly budget \$680. Bills 35%, food 25%, transport 10%. How much remains for savings?

2. Budget \$900. A laptop costs \$840 plus 15% GST. Is it within budget? If not, by how much?

3. Camp budget \$2400 for 24 students. Food is 30%. How much food money is that per student?

4. Holiday budget \$1500. Flights cost \$620. Accommodation is 40% of the rest. How much is that?

Push Tasks — Answers



1. Weekly budget \$680. Bills 35%, food 25%, transport 10%. How much remains for savings?

Solution

$$100\% - 70\% = 30\%$$

$$\$680 \times 0.30 = \$204$$

3. Camp budget \$2400 for 24 students. Food is 30%. How much food money is that per student?

Solution

$$\$2400 \times 0.30 = \$720$$

$$\$720 \div 24 = \$30 \text{ per student}$$

2. Budget \$900. A laptop costs \$840 plus 15% GST. Is it within budget? If not, by how much?

Solution

$$\$840 \times 1.15 = \$966$$

No — \$66 over budget

4. Holiday budget \$1500. Flights cost \$620. Accommodation is 40% of the rest. How much is that?

Solution

$$\$1500 - \$620 = \$880$$

$$\$880 \times 0.40 = \$352$$

Push Tasks



Find a percentage of a budget, or the new amount after a percentage change.

5. Phone plan: \$22/month + \$35 setup. Find the total for 12 months.

6. A budget is cut by 12% from \$850. What is the new budget?

7. A budget increases by 8% from \$625. What is the new budget?

8. Income \$720. Rent 45%, food 20%, transport 15%. How much is saved?

Push Tasks — Answers



5. Phone plan: \$22/month + \$35 setup. Find the total for 12 months.

Solution

$$\$22 \times 12 = \$264$$

$$\$264 + \$35 = \$299$$

6. A budget is cut by 12% from \$850. What is the new budget?

Solution

$$\$850 \times 0.88$$

$$= \$748$$

7. A budget increases by 8% from \$625. What is the new budget?

Solution

$$\$625 \times 1.08$$

$$= \$675$$

8. Income \$720. Rent 45%, food 20%, transport 15%. How much is saved?

Solution

$$100\% - 80\% = 20\%$$

$$\$720 \times 0.20 = \$144$$

Push Tasks



Reason about a budget split by percentage or ratio, including reversing a percentage change.

9. Budget \$960. Entertainment is capped at 12.5%. What is the maximum spend?

10. A bike costs \$540 after a 10% discount. What was the original price?

11. Split a \$2000 budget in the ratio rent:food:savings = 5 : 3 : 2. How much is for savings?

12. A \$900 laptop is needed in 8 months. If \$140 is already saved, how much must be saved each month?

Push Tasks — Answers



9. Budget \$960. Entertainment is capped at 12.5%. What is the maximum spend?

Solution

$$\begin{aligned} \$960 \times 0.125 \\ = \$120 \end{aligned}$$

11. Split \$2000 rent:food:savings = 5 : 3 : 2. Savings share?

Solution

$$\begin{aligned} 5 + 3 + 2 &= 10 \text{ parts} \\ \$2000 \div 10 \times 2 &= \$400 \end{aligned}$$

10. A bike costs \$540 after a 10% discount. What was the original price?

Solution

$$\begin{aligned} \$540 \div 0.90 \\ = \$600 \end{aligned}$$

12. \$900 laptop needed in 8 months, \$140 already saved. Per-month amount?

Solution

$$\begin{aligned} \$900 - \$140 &= \$760 \\ \$760 \div 8 &= \$95 \text{ per month} \end{aligned}$$

Push Tasks



Reason about a budget split by percentage or ratio, including reversing a percentage change.

13. Project budget \$2500. Stage 1 uses 28%, Stage 2 uses 36%, and Stage 3 uses \$410. How much remains?

14. A fundraiser needs \$3200. Ticket sales are \$1875 and sponsorship is 22% of the target. How much more is needed?

15. Weekly budget \$520. Rent \$245, food \$118, transport \$63. How much remains?

16. Event budget \$1800. Venue \$650, food \$420, prizes \$185, printing \$96. How much remains?

Push Tasks — Answers



13. Budget \$2500: Stage 1 28%, Stage 2 36%, Stage 3 \$410. How much remains?

Solution

$$\$700 + \$900 + \$410 = \$2010$$

$$\$2500 - \$2010 = \$490$$

15. Weekly budget \$520. Rent \$245, food \$118, transport \$63. How much remains?

Solution

$$\$245 + \$118 + \$63 = \$426$$

$$\$520 - \$426 = \$94$$

14. Fundraiser needs \$3200: sales \$1875, sponsorship 22% of target. How much more?

Solution

$$\$3200 \times 0.22 = \$704$$

$$\$3200 - \$1875 - \$704 = \$621$$

16. Event budget \$1800. Venue \$650, food \$420, prizes \$185, printing \$96. How much remains?

Solution

$$\$650 + \$420 + \$185 + \$96 = \$1351$$

$$\$1800 - \$1351 = \$449$$