

Percentages Ratio Proportion Time 1 Mixed

1)

A school has 220 boys and 280 girls.

- (a) Find the ratio of boys to girls, in its simplest form.

Answer(a) : [1]

- (b) The ratio of students to teachers is 10 : 1.
Find the number of teachers.

Answer(b) [2]

- (c) There are 21 students on the school's committee.
The ratio of boys to girls is 3 : 4.
Find the number of girls on the committee.

Answer(c) [2]

- (d) The committee organises a disco and sells tickets.
35% of the school's students each buy a ticket. Each ticket costs \$1.60.
Calculate the total amount received from selling the tickets.

Answer(d) \$ [3]

- (e) The cost of running the disco is \$264.
This is an increase of 10% on the cost of running last year's disco.
Calculate the cost of running last year's disco.

Answer(e) \$ [2]

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2)

- (a) In 2008 the total number of tickets sold for an athletics meeting was 3136.
The ratio child tickets sold : adult tickets sold = 17 : 32.

- (i) How many child tickets were sold?

Answer(a)(i)

[2]

- (ii) Child tickets cost \$2 each and adult tickets cost \$4.50 each.

Show that the total amount received from the sale of the tickets in 2008 was \$11 392.

Answer(a)(ii)

[2]

- (b) In 2009 the amount received from the sale of tickets for the athletics meeting was \$12 748.

Calculate the percentage increase in the amount received from 2008 to 2009.

Answer(b)

, % [3]

- (c) In 2008 the amount of \$11 392 was 28% more than the amount received in 2007.

Calculate how much was received in 2007.

Answer(c) \$

[3]

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3)

- (a) Hansi and Megan go on holiday.
The costs of their holidays are in the ratio Hansi : Megan = 7 : 4.
Hansi's holiday costs \$756.
Find the cost of Megan's holiday.

Answer(a) \$ [2]

- (b) In 2008, Hansi earned \$7800.
(i) He earned 15% more in 2009.
Calculate how much he earned in 2009.

Answer(b)(i) \$ [2]

- (ii) In 2010, he earns 10% more than in 2009.
Calculate the percentage increase in his earnings from 2008 to 2010.

Answer(b)(ii) % [3]

- (c) Megan earned \$9720 in 2009. This was 20% more than she earned in 2008.
How much did she earn in 2008?

Answer(c) \$ [3]

- (d) Hansi invested \$500 at a rate of 4% per year **compound** interest.
Calculate the final amount he had after three years.

Answer(d) \$ [3]

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4)

Thomas, Ursula and Vanessa share \$200 in the ratio

$$\text{Thomas} : \text{Ursula} : \text{Vanessa} = 3 : 2 : 5.$$

- (a) Show that Thomas receives \$60 and Ursula receives \$40.

Answer(a)

[2]

- (b) Thomas buys a book for \$21.
What percentage of his \$60 does Thomas have left?

Answer(b)

, % [2]

- (c) Ursula buys a computer game for \$36.80 in a sale.
The sale price is 20% less than the original price.
Calculate the original price of the computer game.

Answer(c) \$

[3]

- (d) Vanessa buys some books and some pencils.
Each book costs \$12 **more** than each pencil.
The total cost of 5 books and 2 pencils is \$64.20.
Find the cost of one pencil.

Answer(d) \$

[3]

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- 5) The table shows the opening and closing times of a café.

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Opening time	0600	0600	0600	0600	0600	(a)	0800
Closing time	2200	2200	2200	2200	2200	2200	1300

- (a) The café is open for a total of 100 hours each week.
Work out the opening time on Saturday.

Answer(a) [2]

- (b) The owner decides to close the café at a later time on Sunday. This increases the **total** number of hours the café is open by 4%.
Work out the new closing time on Sunday.

Answer(b) [1]

- 6) A school has a sponsored swim in summer and a sponsored walk in winter.
In 2010, the school raised a total of \$1380.
The ratio of the money raised in summer : winter = 62 : 53.

- (a) (i) Show clearly that \$744 was raised by the swim in **summer**.

Answer (a)(i)

[1]

- (ii) Alesha's swim raised \$54.10. Write this as a percentage of \$744.

Answer(a)(ii) % [1]

- (iii) Bryan's swim raised \$31.50.
He received 75 cents for each length of the pool which he swam.

Calculate the number of lengths Bryan swam.

Answer(a)(iii) [2]

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7) At a theatre, adult tickets cost \$5 each and child tickets cost \$3 each.

- (a) Find the total cost of 110 adult tickets and 85 child tickets.

Answer(a) \$ [2]

- (b) The total cost of some tickets is \$750.
There are 120 adult tickets.

Work out the number of child tickets.

Answer(b) [2]

- (c) The ratio of the **number** of adults to the **number** of children during one performance is

adults : children = 3 : 2.

- (i) The total number of adults and children in the theatre is 150.

Find the number of adults in the theatre.

Answer(c)(i) [2]

- (ii) For this performance, find the ratio **total cost** of adult tickets : **total cost** of child tickets.
Give your answer in its simplest form.

Answer(c)(ii) : [3]

- (d) The \$5 cost of an adult ticket is increased by 30%.

Calculate the new cost of an adult ticket.

Answer(d) \$ [2]

- (e) The cost of a child ticket is reduced from \$3 to \$2.70.

Calculate the percentage decrease in the cost of a child ticket.

Answer(e) % [3]

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8)

Lucy works in a clothes shop.

(a) In one week she earned \$277.20.

(i) She spent $\frac{1}{8}$ of this on food.

Calculate how much she spent on food.

Answer(a)(i) \$ [1]

(ii) She paid 15% of the \$277.20 in taxes.
Calculate how much she paid in taxes.

Answer(a)(ii) \$ [2]

(iii) The \$277.20 was 5% more than Lucy earned in the previous week.
Calculate how much Lucy earned in the previous week.

Answer(a)(iii) \$ [3]

(b) The shop sells clothes for men, women and children.

(i) In one day Lucy sold clothes with a total value of \$2200 in the ratio

men : women : children = 2 : 5 : 4.

Calculate the value of the women's clothes she sold.

Answer(b)(i) \$ [2]

(ii) The \$2200 was $\frac{44}{73}$ of the total value of the clothes sold in the shop on this day.

Calculate the total value of the clothes sold in the shop on this day.

Answer(b)(ii) \$ [2]

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9)

Maria decides to increase her homework time of 8 hours per week by 15%.

Calculate her new homework time.

Give your answer in hours and minutes.

Answer , h min [3]