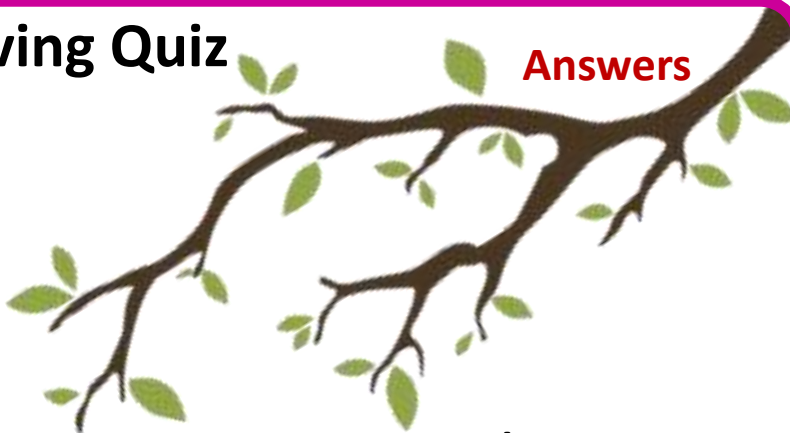
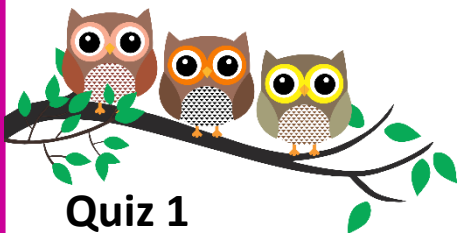


Foundation Interleaving Quiz

Answers

Branch 1

Quizzes 1 to 3



Quiz 1

Q	Topic	Σ	R	A	G
1	Product of Prime Factors				
2	Factorise				
3	Area Problem				
4	Venn Diagram				

Home Study Focus

Home Study
Completed

Quiz 2

Q	Topic	Σ	R	A	G
1	Standard Form				
2	Expand and simplify				
3	Right Angled Trigonometry				
4	Charts and Averages				

Home Study Focus

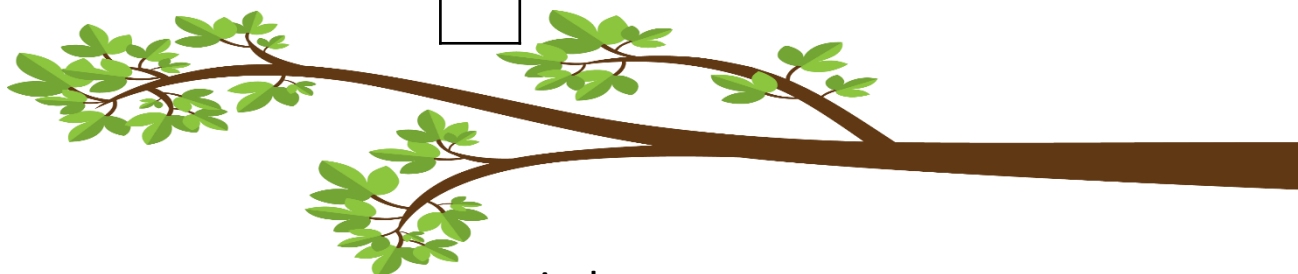
Home Study
Completed

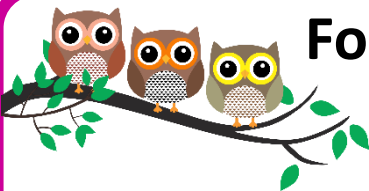
Quiz 3

Q	Topic	Σ	R	A	G
1	Ratio Problem				
2	Function Machines				
3	Volume and Mass				
4	Mean from a Table				

Home Study Focus

Home Study
Completed





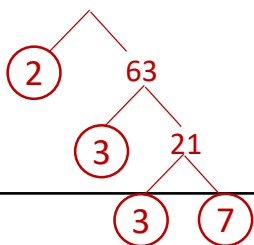
Foundation Interleaving Quiz



Branch 1 Quiz 1

Answers

- 1) Express 126 as a product of its prime factors in index form. **(3 marks)**



$$2 \times 3 \times 3 \times 7$$

Answer: $2 \times 3^2 \times 7$

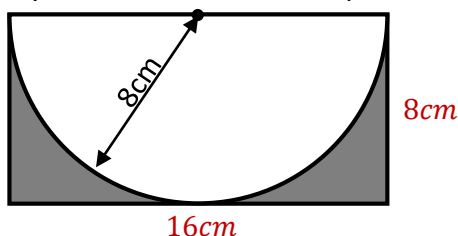
- 2) a) Factorise $8x^2 - 12xy$ **(1 mark)**

Answer: $4x(2x - 3y)$

- b) Factorise $x^2 + 5x + 6$ **(1 mark)**

Answer: $(x + 2)(x + 3)$

- 3) The radius of the semi circle is 8cm . Calculate the area of the shaded section. Leave your answer in terms of pi. **(4 marks)**



$$\text{Rectangle} = 16 \times 8 = 128$$

$$\text{Circle} = \pi \times 8^2 = 64\pi$$

$$\text{Semi circle} = 64\pi \div 2 = 32\pi$$

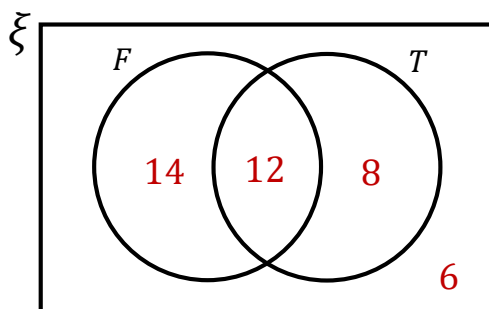
Answer: $128 - 32\pi \text{ cm}^2$

- 4) 40 students were asked in a survey whether they used Facebook or Twitter.

$\xi = 40$ students

$F = \text{Facebook}$

$T = \text{Twitter}$



14 students said they use only Facebook.

8 students said they use only Twitter

12 students said they use both Facebook and Twitter.

- a) Put this information on the Venn Diagram.

(1 mark)

- b) How many students in the survey do not use Facebook or Twitter. **(1 mark)**

Answer: $40 - 34 = 6$

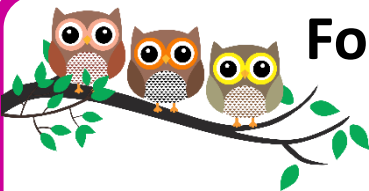
- c) One of the students is chosen at random. What is the probability that this student uses Twitter? **(2 marks)**

$$\text{Answer: } \frac{8 + 12}{40} = \frac{20}{40} = \frac{1}{2}$$

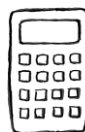
- d) What percentage of students in the survey use Facebook? **(2 marks)**

$$\text{Answer: } \frac{14 + 12}{40} = \frac{26}{40} = \frac{13}{20} = 65\%$$

Q	Topic	Σ	R	A	G
1	Product of Prime Factors				
2	Factorise				
3	Area Problem				
4	Venn Diagram				



Foundation Interleaving Quiz



Branch 1 Quiz 2

Answers

1) A teacher asks Faheem and Ella to convert 20 257 into standard form.

a) Faheem writes 20.257×10^3 (1 mark)
Criticise Faheem's answer.

20.257 is not between 1 and 10.

The number needs to be between 1 and 10.

b) Ella writes 2.0257×10^{-4} (1 mark)
Criticise Ella's answer.

The power should be positive.

The answer should be 2.0257×10^4

2) Expand and simplify (3 marks)

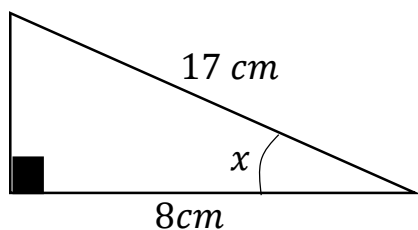
$$4(x - 1) - 2x(x - 5)$$

$$4x - 4 - 2x^2 + 10x$$

$$= 14x - 4 - 2x^2$$

Answer: $-2x^2 + 14x - 4$

3) Work out the size of angle x (2 marks)



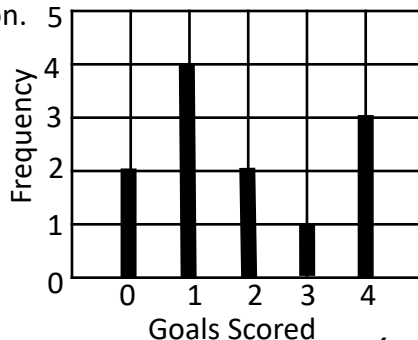
$$\cos x = \frac{8}{17}$$

$$x = \cos^{-1}\left(\frac{8}{17}\right)$$

Answer: 61.9°

4) The diagram shows information about the number of goals Team A scored during matches in the season.

Team A



a) What is the mode score? (1 marks)

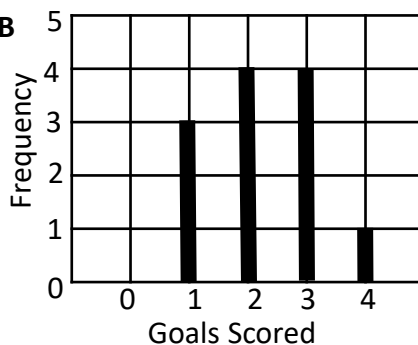
Answer: 1

b) A match is chosen at random from Team A's season. Work out the probability that the goals scored was the mode amount for the team.

$$\frac{4}{12} = \frac{1}{3} \quad (2 \text{ marks})$$

Answer:

Team B



c) Show that Team B's scores are more consistent than Team A's (3 marks)

Range: Team A = $4 - 0 = 4$

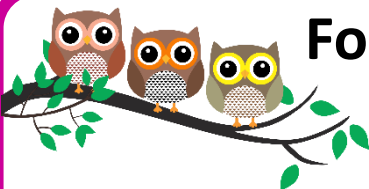
Team B = $4 - 1 = 3$

Team B's range is lower so their results are more consistent.

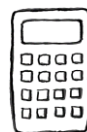
d) Calculate the median number of goals Team B scored. (2 marks)

1 1 1 2 2 2 2 3 3 3 3 4 $\frac{12 + 1}{2} = 6.5^{\text{th}}$
 Answer: Median is 2

Q	Topic	Σ	R	A	G
1	Standard Form				
2	Expand and simplify				
3	Right Angled Trigonometry				
4	Charts and Averages				



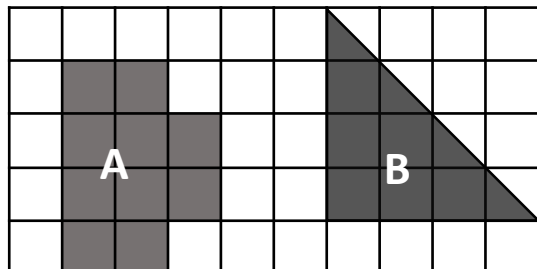
Foundation Interleaving Quiz



Branch 1 Quiz 3

Answers

- 1) Work out the area of shape A : area of shape B.
Give your answer in it's simplest form.
(3 marks)



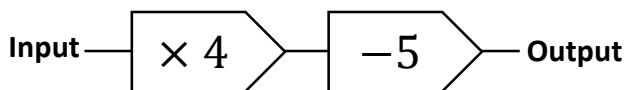
$$\text{Area A} = 10$$

$$\text{Area B} = 8$$

$$10:8$$

Answer: 5:4

- 2) Below is a function machine



- a) What is the output when the input is -3 ?
(1 marks)

Answer: -17

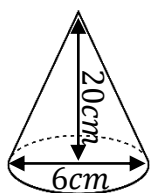
- b) What is the input when the output is -3 ?
(1 marks)

Answer: $\frac{1}{2} = 0.5$

- 3) (3 marks)

- a) Calculate the volume of the cone.
Give your answer correct to 1 d.p..

$$\text{Volume of cone} = \frac{1}{3}\pi r^2 h$$



$$(\pi \times 3^2 \times 20) \div 3$$

Answer: 188.5cm^3

- b) The cone has density of 0.2g/cm^3 . (2 marks)
Calculate the mass of the object.

$$188.5 \times 0.2$$

Answer: 37.7g

- 4) This frequency table gives information about the scores of 70 students on a science test.

Score (S)	Frequency	MP	Fx
$0 < S \leq 30$	8	15	120
$30 < S \leq 40$	15	35	525
$40 < S \leq 60$	27	50	1350
$60 < S \leq 70$	16	65	1040
$70 < S \leq 80$	4	75	300
	70		3335

- a) Calculate an estimate for the mean score.
(3 marks)

$$3335 \div 70 = 47.64285714$$

Answer: 48 marks

- b) Calculate the proportion of the class which scores more than 50% on the test. (2 marks)

$$80 \text{ marks} \div 2 = 40 \text{ marks}$$

$$27 + 16 + 4 = 47 \quad \frac{47}{70} = 67.14\%$$

Answer: 67.1%

Q	Topic	Σ	R	A	G
1	Ratio Problem				
2	Function Machines				
3	Volume and Mass				
4	Mean from a Table				