

YOUR NAME : _____

Summer Examinations Revision Test 2024

Exams start Monday 10th June 2024

Lesson 9

Marks Available : 100

9.1 Test

Question 1

(a) (i)

Divide £32 in the ratio 3 : 5

(ii)

Divide \$99 in the ratio 4 : 7

[4 marks]

(b) Cancel down fully these fractions;

(i)

$$\frac{4}{12}$$

(ii)

$$\frac{12}{20}$$

(iii)

$$\frac{18}{30}$$

(iv)

$$\frac{45}{75}$$

[4 marks]

(c) Simplify these ratios;

(i)

5 : 55

(ii)

12 : 15

(iii)

3 : 9 : 12

(iv)

9 : 15 : 18

[4 marks]

Question 2

(i) Solve these simultaneous equations

$$8x + 5y = 19$$

$$ADD \quad 3x - 5y = 14$$

[4 marks]

(ii) Solve these simultaneous equations

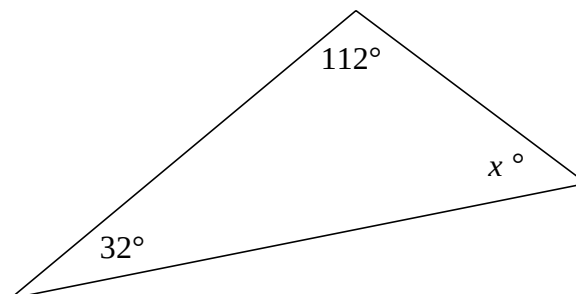
$$14x + 9y = 167$$

$$SUBTRACT \quad 3x + 9y = 57$$

[4 marks]

Question 3

Determine the size of angle x .



[2 marks]

Question 4

Showing full working, calculate

(i)

$$\frac{3}{4} - \frac{2}{5}$$

(ii)

$$\frac{5}{11} + \frac{2}{9}$$

(iii)

$$\frac{5}{11} \times \frac{4}{7}$$

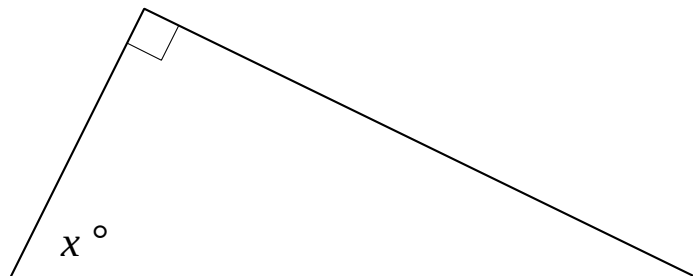
(iv)

$$\frac{3}{23} \div \frac{2}{5}$$

[8 marks]

Question 5

Label the sides of this triangle with the words, *hypotenuse*, *opposite* and *adjacent* where x is the angle-of-focus.



[2 marks]

Question 6

Jasper is practicing taking penalty shots on the football pitch.

On average, only 3 shots out of every 30 are **NOT** goals.

What percentage of his shots are goals ?

[2 marks]

Question 7

(a) What does the word *factorise* mean ?

[1 mark]

(b) Factorise the following;

(i) $x^2 + 13x + 30$

[3 marks]

(ii) $x^2 + x - 20$

[3 marks]

Question 8

Only one of these formulae is correct.

Draw a circle around it.

$$\sin A = \frac{\textit{Opposite}}{\textit{Adjacent}} \quad \cos A = \frac{\textit{Opposite}}{\textit{Adjacent}} \quad \tan A = \frac{\textit{Opposite}}{\textit{Adjacent}}$$

[1 marks]

Question 9

- (i) Solve these simultaneous equations.
You'll need to decide if they should be combined by addition or subtraction.

$$7x + 6y = 63$$

$$7x + 3y = 42$$

[4 marks]

- (ii) Solve these simultaneous equations.
You'll need to decide if they should be combined by addition or subtraction.

$$5x + 9y = 31$$

$$-5x + 6y = 29$$

[4 marks]

Question 10

- (i) What is 25% of £44 ?
- (ii) What is 50% of £700 ?
- (iii) What is 20 % of £50 ?
- (iv) What is $33\frac{1}{3}\%$ of £60 ?
- (v) What is 75% of £20 ?

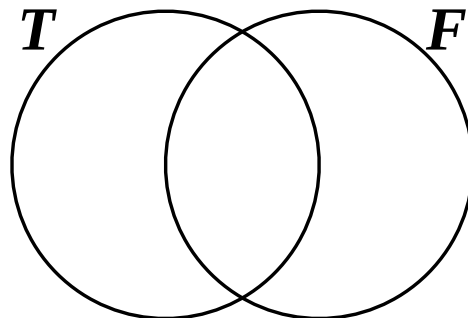
[5 marks]

Question 11

- (a) On a Venn Diagram to show the relationship between the sets T and F
where $T = \{ \text{The factors of 20} \}$ and $F = \{ \text{The factors of 45} \}$

$$T = \{ \quad , \quad , \quad , \quad , \quad , \quad \}$$

$$F = \{ \quad , \quad , \quad , \quad , \quad , \quad \}$$



- (b) List the elements of

(i) $T \cap F$

(ii) $T \cup F$

(iii) $T \cap F'$

[7 marks]

Question 12

What is the cost of six Fish Suppers at £2.95 each ?

[2 marks]

Question 13

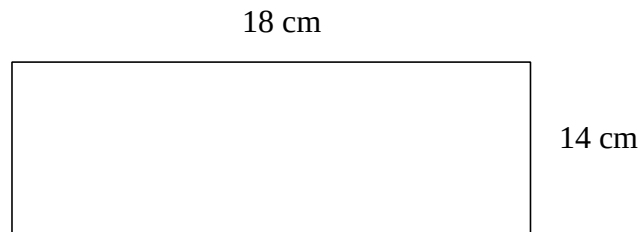
A Film starts at 19:35 and finishes at 21:10

How long, in hours and minutes, is the film ?

[2 marks]

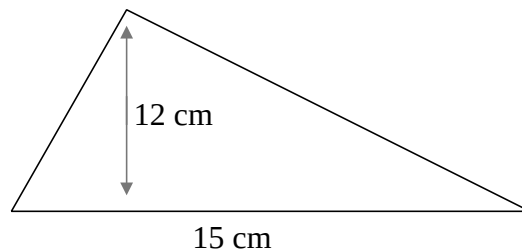
Question 14

(a) A rectangle measures 14 cm by 18 cm.



What is the PERIMETER of the rectangle ?

(b) A triangle has a base of 15 cm and a perpendicular height of 12 cm.



What is the AREA of the triangle ?

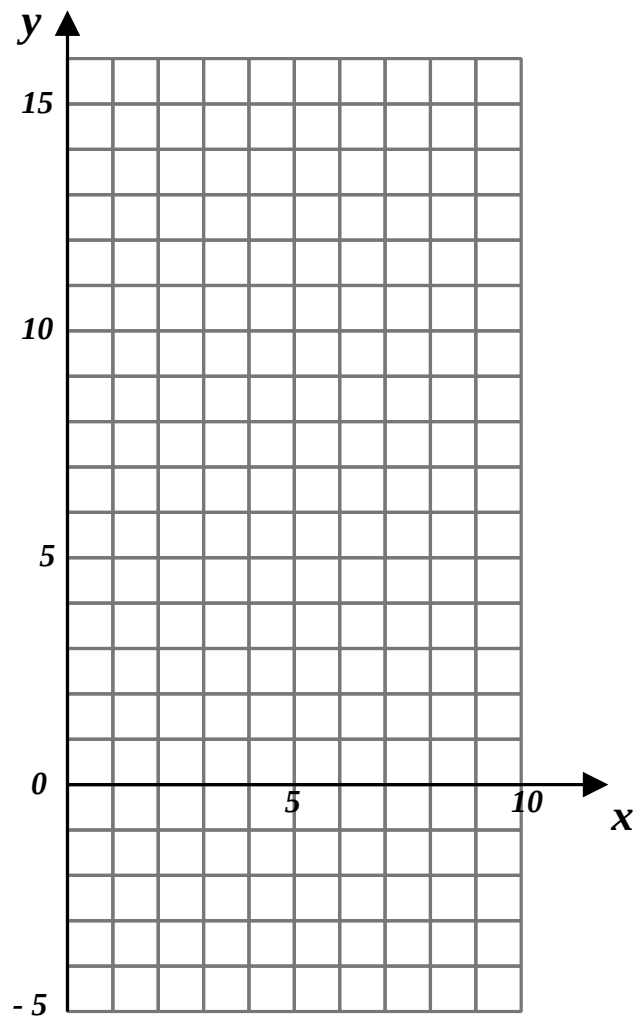
[4 marks]

Question 15

(a) Complete this table

x	0	1	2	3	4	5	6	7	8	9	10
$y = 0.5x + 2.5$			3.5								

(b) Use your table to plot the line with equation $y = 0.5x + 2.5$

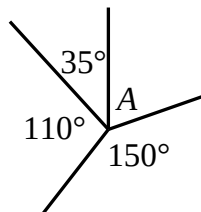


Write the equation of the line next to it on the graph.

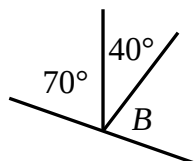
[6 marks]

Question 16

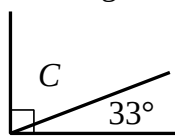
- (i) Find angle A .



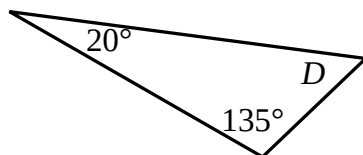
- (ii) Find angle B .



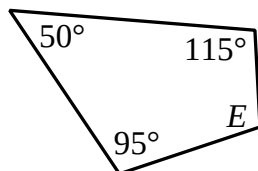
- (iii) Find angle C .



- (iv) Find angle D .



- (v) Find angle E .



[5 marks]

Question 17

Write down the next three terms in each of these Arithmetic Progressions;

(i) 2, 5, 8, 11, _____, _____, _____

(ii) 512, 519, 526, 533, _____, _____, _____

(iii) 57, 43, 29, 15, _____, _____, _____

(iv) 5.3, 6.4, 7.5, 8.6, _____, _____, _____

(v) - 10, -8, - 6, - 4, _____, _____, _____

[5 marks]

Question 18

The factors of 48 are { 1, 2, 3, 4, 6, 8, 12, 16, 24, 48 }

The factors of 64 are { 1, 2, 4, 8, 16, 32, 64 }

What is the Highest Common Factor of 48 and 64 ?

[2 marks]

Question 19

(a) What is the HCF, *the highest common factor*, of 28 and 32 ?

[2 marks]

(b) What is the LCM, *the lowest common multiple*, of 9 and 15 ?

[2 marks]

Question 20

(a) Expand the brackets;

$$(x + 6)(x + 5)$$

[2 marks]

(b) The opposite of *expanding the brackets* is *making brackets*.

Try to puzzle what must be in these brackets;

(i)

$$x^2 + 4x + 3 = (\quad + \quad) (\quad + \quad)$$

[2 marks]

(ii)

$$x^2 - 8x + 15 = (\quad - \quad) (\quad - \quad)$$

[2 marks]

(iii)

$$x^2 + 3x - 28 = (\quad - \quad) (\quad + \quad)$$

[2 marks]

You will need a calculator for
the next lesson's revision exercise

This document is a part of a **Mathematics Community Outreach Project** initiated by Shrewsbury School

It may be freely duplicated and distributed, unaltered, for non-profit educational use

In October 2020, Shrewsbury School was voted “**Independent School of the Year 2020**”

© 2022 Number Wonder

Teachers may obtain detailed worked solutions to the exercises by email from mhh@shrewsbury.org.uk