

# JOY INTERNATIONAL COLLEGE

KM 12 KADUNA ABUJA EXPRESS WAY P.O BOX 4045  
A CHRISTIAN CO-EDUCATIONAL BOARDING SCHOOL

SUBJECT: MATHEMATICS

CLASS: JSS 3

SESSION: 2019/2020

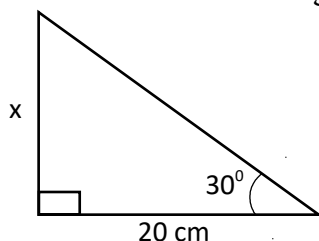
DATE: APRIL 2020 LIST OF TOPICS TO STUDY:

S/ NO.	WEEK S	TOPIC	CONTENT	OBJECTIVES
1.	3	GEOMETRY	Study: <ul style="list-style-type: none"><li>• Areas of plane shapes.</li><li>• Angles and polygons</li><li>• Trigonometry (SOHCAHTOA)</li></ul>	By the end of this chapter you should be able to; <ul style="list-style-type: none"><li>✓ Calculate the area of plane shapes, like the trapezium, triangles and circles e.t.c.</li><li>✓ Solve problems on angles(at a point, in a triangle)</li><li>✓ Solve problems on interior and exterior angles of polygons.</li><li>✓ Solve mathematical problems using the trigonometric functions/ratios(sine, cosine and tangent)</li></ul>
2.	4	ALGEBRA	<ul style="list-style-type: none"><li>• Simultaneous equations</li><li>• Substitution</li><li>• Factorization</li></ul>	By the end of this chapter you should be able to; <ul style="list-style-type: none"><li>✓ Solve problems on Simultaneous equations by method of elimination or substitution.</li><li>✓ Substitute values for letters and evaluate.</li><li>✓ Factorize linear expressions, difference of two squares and quadratic expressions</li></ul>

**INSTRUCTION: Answer all questions from this Section.**

**A: Week 3 Questions**

1] Find the value of  $x$  in the figure below to the nearest whole number.



(a) 7 cm

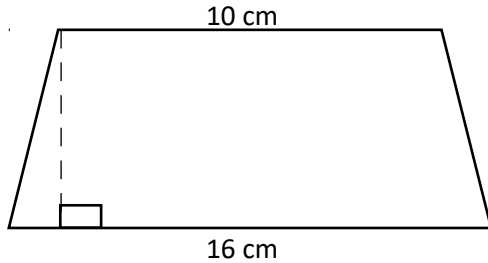
(b) 9 cm

- (c) 12 cm                      (d) 11 cm      (e) 15 cm

2] Find the diameter of a circle whose circumference is 44 cm.

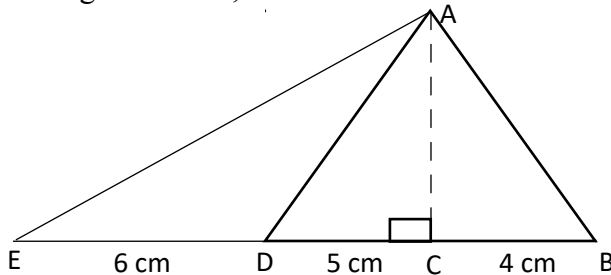
- (a) 44 cm                      (b) 28cm  
 (c) 22 cm                      (d) 14cm  
 (e) 7 cm

3] Calculate the vertical height of the trapezium below if the area is  $104 \text{ cm}^2$ .



- (a) 4 cm                      (b) 6 cm  
 (c) 8 cm                      (d) 10 cm  
 (e) 14 cm

4] in the diagram below, if the area of  $\Delta ABC$  is  $40 \text{ cm}^2$ , find the area of  $\Delta ABE$

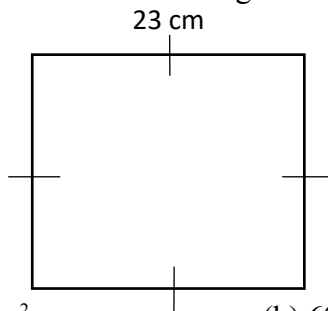


- (a)  $100 \text{ cm}^2$                       (b)  $120 \text{ cm}^2$   
 (c)  $150 \text{ cm}^2$                       (d)  $240 \text{ cm}^2$   
 (e)  $300 \text{ cm}^2$

5] Calculate the area of a semi-circle of diameter 28 cm. Take  $\left(\pi = \frac{22}{7}\right)$

- (a)  $22 \text{ cm}^2$                       (b)  $196 \text{ cm}^2$   
 (c)  $308 \text{ cm}^2$                       (d)  $560 \text{ cm}^2$   
 (e)  $616 \text{ cm}^2$

6] Find the area of the diagram below.

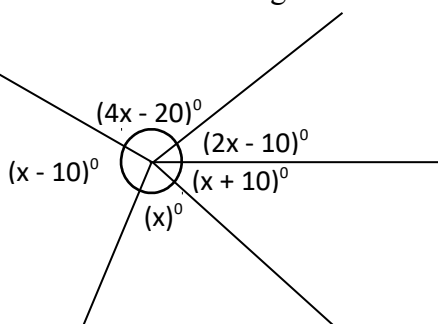


- (a)  $46 \text{ cm}^2$                       (b)  $69 \text{ cm}^2$   
 (c)  $484 \text{ cm}^2$                       (d)  $529 \text{ cm}^2$   
 (e)  $600 \text{ cm}^2$

- 7] The angles of an equilateral triangle are  $2a^{\circ}$ ,  $3b^{\circ}$  and  $4c^{\circ}$ . Find the value of  $a^{\circ} + b^{\circ} + c^{\circ}$
- (a)  $20^{\circ}$  (b)  $60^{\circ}$   
(c)  $65^{\circ}$  (d)  $75^{\circ}$   
(e)  $180^{\circ}$

- 8] The sum of interior angles of a regular polygon is  $1440^{\circ}$ . Find the number of its sides.
- (a) 12 (b) 10  
(c) 9 (d) 8  
(e) 5

9] Find the value of  $x$  in the figure below.



- (a)  $20^{\circ}$  (b)  $30^{\circ}$   
(c)  $35^{\circ}$  (d)  $36.7^{\circ}$   
(e)  $43.3^{\circ}$
- 10] The angle of elevation of the top of a tree from a certain point on the ground is  $45^{\circ}$ . If the tree is 15m high, how far is the point from the bottom of the tree?
- (a) 10 m (b) 12 m  
(c) 15 m (d) 18 m  
(e) 20 m

**INSTRUCTION: Answer all questions from this Section.**

**B: Week 4 Questions**

1] Factorize  $xy + 4x + 2y + 8$

- (a)  $(x + 2)(y + 4)$  (b)  $(x + 2)(y - 4)$   
(c)  $(x - 2)(y + 4)$  (d)  $(2 - x)(y + 2)$   
(e)  $(1 - x)(y + 2)$

2] Factorize  $12x^2 + 15xy$

- (a)  $3(4x^2 + 5xy)$  (b)  $3x(4x + 5y)$   
(c)  $4x + 5y$  (d)  $4x(3x + 5y)$   
(e)  $6x(2x + 15y)$

3] Factorize  $7a^3b^2 - 14a^2b^3$ .

- (a)  $a^2 - 2b$  (b)  $a - 2b^2$   
(c)  $a - 2b$  (d)  $7a^2b^2(a - 2b)$   
(e)  $14a^2b^2(a^2 - 2b^2)$

4] Simplify  $\frac{x^2-3x}{x^2-5x+6}$

(a)  $\frac{x-3}{x-2}$

(b)  $\frac{x-2}{x-3}$

(c)  $\frac{x}{x-3}$

(d)  $\frac{x}{x-2}$

(e)  $\frac{x^2}{(x-3)(x-2)}$

5] If  $y = 2x$  in completing the table below, find the values of **a** and **b** respectively.

x	-2	-1	0	1	2	3
y	<b>a</b>	-2	0	2	4	<b>b</b>

(a) 4 and 6

(b) 4 and 4

(c) -4 and 6

(d) -4 and -4

(e) -2 and 3.

6] Solve  $\frac{3}{8}(5x+1) = \frac{3}{4}$

(a) 0

(b)  $\frac{1}{5}$

(c)  $\frac{1}{3}$

(d)  $\frac{1}{2}$

(e) 3

7] Given that  $y = 3x + 13$ , find the value of  $x$  in  $2x + 3y = 17$

(a) -2

(b) -1

(c) 1

(d) 2

(e) 4

8] Solve the simultaneous equations;  $x + y = 2$  and  $x - y = 1$ .

(a)  $x = -1, y = -1$

(b)  $x = -1, y = 1$

(c)  $x = 1, y = \frac{1}{2}$

(d)  $x = \frac{3}{2}, y = \frac{1}{2}$

(e)  $x = \frac{4}{3}, y = \frac{3}{2}$

9] Solve the simultaneous equations;  $x + 2y = 1$  and  $2x + 5y = 4$ .

(a)  $x = -3, y = 2$

(b)  $x = 3, y = 2$

(c)  $x = 2, y = 5$

(d)  $x = -2, y = 5$

(e)  $x = 1, y = 4$

10] Solve  $x + y = 5$  and  $2x - y = 3$  simultaneously.

(a)  $x = 1, y = 3$

(b)  $x = 2, y = 3$

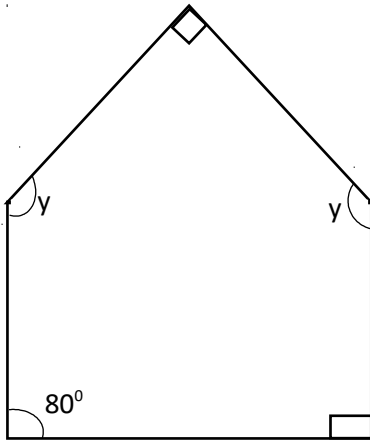
(c)  $x = 3, y = 2$

(d)  $x = 3, y = 4$

(e)  $x = 4, y = 3$

### SECTION C: Essay Questions

1. (a) Find the value of  $y$  in the figure below



- (b) The height of an equilateral triangle is 15 cm and its perimeter is 36 cm. find the area of the triangle.
2. (a) Factorize  $y^2 + 6y - 27$ .  
(b) Factorize  $a^2 - b^2$   
(c) Given that  $y = \frac{x+9}{x-3}$  find the value of  $x$  when  $y = 4$ .

Examiners' contacts:

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- Students should feel very free to interact with any of the above teachers via WhatsApp, email or phone calls for assistance, enquiries, questions or clarifications.
  - Students should solve essay questions in their test and assignment notebooks.
- Thank you.