PB PAGEZ MOCK 2
AUGUST 2021

MATHEMATICS
Essay And Objective
2 Hours

2&1

Name..

Index Number......................................

PB PAGEZ EXAMINATION

Private Mock Examinations For BECE Candidates

AUGUST 2021 **MATHEMATICS 2 & 1** **2 Hours**

All answers must be provided on clean sheet of papers (Answer booklet).

Write your name and index number on the sheets.

This booklet consists of two papers. Answer Paper 2 which comes first in your answer booklet and Paper 1 on your Objective Answer Sheet. Paper 2 will last for **1** Hour after which the answer booklet will be collected. Do **not** start Paper 1 until you are told to do so. Paper 1 will last **1** hour.

The use of calculators is not allowed.

Answer all questions in your answer booklet.

PAPER 2

Essay – **1 Hour**

[60 marks]

Answer **four** *questions* **only** *from this section. All working must be clearly shown. The use of calculators is* **not** *allowed. Marks will* **not** *be awarded for correct answers without corresponding working.*

All questions carry equal marks.

1. (a) Factorize: $(m + n)(2x - y) - x(m + n)$

(b) A and B are subsets of a universal set

U = {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18}

Such that A = {even numbers} and B = {multiples of 3}

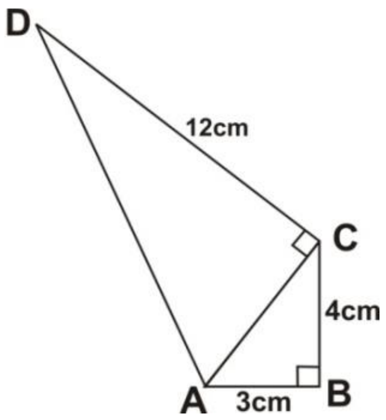
(i) List the elements of the sets A, B, (A∩B), (AUB) and (AUB)′

(ii) Illustrate the information in (i) on a Venn diagram

(c) Find the values of x and y in the vector equation

$$\begin{pmatrix}5\\3\end{pmatrix} + 2\begin{pmatrix}x\\y\end{pmatrix} - \begin{pmatrix}1\\-7\end{pmatrix} = 0$$

2. (a) Find the sum of 2,483.65, 701.532 and 102.7, giving your answer to one decimal place.



(b) In the quadrilateral ABCD above, |AB| = 3 cm, |BC| = 4 cm, |CD| = 12 cm and angle ABC = 90°. Calculate:

(i) the perimeter of ABCD

(ii) the area of ABCD

3. (a) Evaluate: $\frac{2^7 \times 3^4 \times 5^3}{2^3 \times 3^2 \times 5^2}$, leaving your answer in standard form.

(b) Kwame rode a bicycle for a distance of *x* km and walked for another ½ hour at a rate of 6 km/hour. If Kwame covered a total distance of 10 km, find the distance *x* he covered by bicycle.

(c) A rectangular tank of length 22 cm, width 9 cm and height 16 cm is filled with water. The water is poured into a cylindrical container of radius 6 cm.

Calculate the :

(i) volume of the rectangular tank

(ii) depth of water in the cylindrical container. [Take $\pi = {}^{22}/_{7}$]

4. (a) A box has length 8.0 cm, width 5.0 cm and height 10.0 cm.

Find the:

(i) total surface area of the box

(ii) the volume of the box.

(b) (i) Using a scale of 2cm to 1 unit on both axes, draw two perpendicular axes Ox and Oy on a graph sheet.

(ii) On the same graph sheet mark the x-axis from –5 to 5 and the y-axis from – 6 to 6

(iii) Plot and join the points A(0, 3), B(2, 3), C(4, 5) to form triangle ABC.

(iv) Draw the image $A_1B_1C_1$ of triangle ABC under a translation by the vector $\begin{pmatrix}-1\\-1\end{pmatrix}$

(v) Draw the image $A_2B_2C_2$ of triangle ABC under a reflection in the x - axis

5. (a) Using a ruler and a pair of compass only;

(i) construct triangle PQR such that $|\overline{PR}|$ = 8cm, $|\overline{PQ}|$ = 6 cm and $|\overline{QR}|$ = 5cm;

(ii) construct the perpendicular bisector of $\overline{PR}$ and label it ℓ_1;

(iii) construct the perpendicular bisector of $\overline{QR}$ and label it ℓ_2;

(iv) Label the point of intersection of ℓ_1 and ℓ_2 as N;

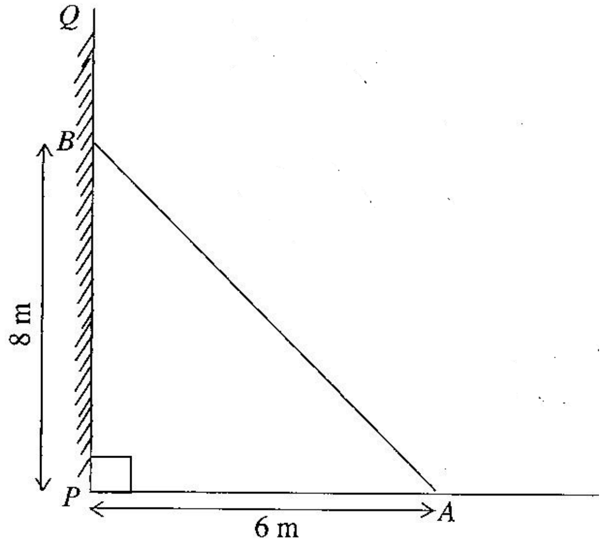
(v) With N as centre and radius equal to |PN|, draw a circle.

(b) (i) Measure the radius of the circle.

(ii) Calculate the circumference of the circle, correct to 3 significant figures. [Take $\pi = 3.14$]

6. (a) Factorize completely $6xy - 3y + 4x - 2$

(b)



NOT DRAWN TO SCALE

The diagram shows a ladder AB which leans against a vertical wall PQ at B.
If |PB| is 8 m, and the other end of the ladder is 6 m away from the foot of the wall (at P), find the length of the ladder (|AB|)

(c) Kojo had 1800 bags of rice in stock for sale. In January, he sold ⅔ of it.
In February, he sold ¾ of what was left.

(i) What fraction of the stock of rice did he sell
(α) in February?
(β) in January and February?

(ii) How many bags of rice were left unsold, by the end of February?

DO NOT TURN OVER

THIS PAGE

UNTIL YOU ARE TOLD TO DO SO.

PAPER 1 1 HOUR

OBJECTIVE TEST

Write your name and index number in ink in the spaces provided above

1. Use **2B** pencil throughout.
2. On the pre-printed answer sheet, check that the following details are correctly printed:

   Your surname followed by your other names, the subject Name, your Index Number, Centre Number and the Paper Code.
3. In the boxes marked *Candidate Name*, *Centre Number* and *Paper code*, reshade each of the shaded Spaces.

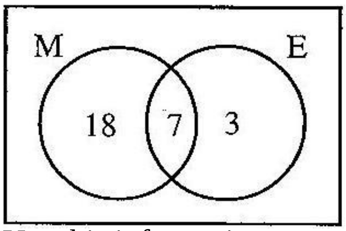
MATHEMATICS 2

OBJECTIVE TEST

1 HOUR

1. If set **N** is a subset of set **M**, then
   A. sets **M** and **N** have the same number of elements
   B. some members of set **N** can be found in set **M**
   C. no member of set **N** is in set **M**
   D. all members of set **N** are in set **M**

The Venn diagram shows the number of pupils who offer Mathematics (M) and / or English in a class.



Use this information to answer Questions **2** and **3**.

2. How many pupils offer Mathematics?
   A. 10
   B. 18
   C. 25
   D. 28

3. How many pupils offer only one subject?
   A. 3
   B. 7
   C. 18
   D. 21

4. Simplify: 12 – 7 – (– 5)
   A. – 10
   B. – 2
   C. 0
   D. 10

5. Express 72 as a product of its prime factors
   A. 2×3^3
   B. $2^2 \times 3^3$
   C. $2^3 \times 3$
   D. $2^3 \times 3^2$

6. Find the **smallest** number which is divisible by 16 and 20?
   A. 40
   B. 80
   C. 120
   D. 160

7. Convert 243_{five} to a base ten numeral.
   A. 40
   B. 43
   C. 45
   D. 73

8. A pineapple which was bought for GH¢ 1.00 was sold at GH¢ 1.30. Calculate the profit percent.
   A. 10%
   B. 20%
   C. 23%
   D. 30%

9. Simplify $35x^5y^3 \div 7xy^2$
   A. $5x^4y$
   B. $5x^4y^5$
   C. $5x^6y$
   D. $5x^6y^5$

10. Two bells P and Q ring at intervals of 3 hours and 4 hours, respectively. After how many hours will the two bells **first** ring simultaneously (at the same time)?
    A. 6 hours
    B. 8 hours
    C. 12 hours
    D. 24 hours

11. A boy scores $\frac{17}{25}$ in a French test. Express his score as a percentage.
    A. 17%
    B. 34%
    C. 68%
    D. 85%

12. Arrange the following fractions in ascending order of magnitude

$\frac{2}{5}, \frac{5}{12}$ *and* $\frac{3}{4}$, ,

A. $\frac{2}{5}, \frac{3}{4}, \frac{5}{12}$

B. $\frac{2}{5}, \frac{5}{12}, \frac{3}{4}$

C. $\frac{5}{12}, \frac{2}{5}, \frac{3}{4}$

D. $\frac{3}{4}, \frac{2}{5}, \frac{5}{12}$

13. Kofi paid rent of GH¢ 1,800.00 each year. If the rent is 0.3 of his annual income, find his annual income.

A. GH¢ 600.00
B. GH¢5,400.00
C. GH¢ 6,000.00
D. GH¢ 18,000.00

14. I gave a storekeeper a GH¢10.00 note for goods I bought. He asked me for another 15Gp for ease of change. If he then gave me 50 Gp, how much did I pay for the goods?

A. GH¢ 9.35
B. GH¢ 9.45
C. GH¢ 9.65
D. GH¢ 10.65

15. Kojo can buy 15 shirts at GH¢ 4.00 each. If the price is increased to GH¢ 5.00, how many shirts can he now buy?

A. 12
B. 15
C. 19
D. 20

16. A hall which is 8m long is represented on a diagram as 4 cm long. What is the scale of the diagram?

A. 1:200
B. 1:250
C. 1:400
D. 1:800

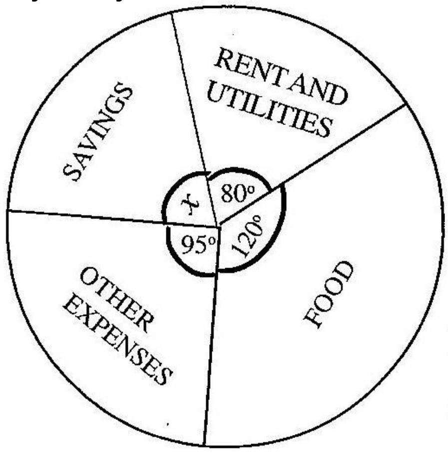
17. Jane arrived at work at 7:55 am and left at 4:15 pm. For how long was she at work?

A. 7 hr 20 min
B. 7 hr 45 min
C. 8 hr 20 min
D. 8 hr 40 min

18. Given that (3.14 × 18) × 17.5 = 3.14 × (3p × 17.5), find the value of p

A. 3.0
B. 5.8
C. 6.0
D. 9.0

The pie chart shows how Kwaku spends his monthly salary.



Use this information to answer Questions **19** *to* **21**

19. Find the value of x

A. 65°
B. 75°
C. 85°
D. 100°

20. Kwaku earns GH¢ 630.00 a month. How much of this does he spend on food?

A. GH¢ 140.00
B. GH¢ 157.00
C. GH¢ 210.00
D. GH¢ 350.00

21. Factorize: xy + 5x + 2y + 10

A. (x + 5)(2y + 10)
B. (x + 2)(y + 10)
C. (x + 5)(y + 2)
D. (x + 2)(y + 5)

22. If x ∈ {2, 3, 4, 5}, find the truth set of 2x + 1 < 8

A. {2,3,4}

B. {2,3}

C. {3,4}

D. {4,5}

23. Solve the inequality: $7x - (10x + 3) \geq -9$

A. $x \geq 2$
B. $x \leq 4$
C. $x \geq 4$
D. $x \leq 2$

24. Find the rule of the mapping:

1	2	3	4	5 ...	x
↓	↓	↓	↓	↓	↓
7	11	15	19	23 ...	y

A. $x \rightarrow 4x-3$

B. $x \rightarrow 3-4x$

C. $x \rightarrow 4x+3$

D. $x \rightarrow 4x+5$

25. Find the circumference of a circle whose area is equal to 64π cm^2.

A. 32π cm^2
B. 16π cm^2
C. 8π cm^2
D. 4π cm^2

26. Which of the following geometric figures is the plane shape of a cube?

A. Circle

B. Rectangle

C. Square

D. Triangle

27. How many lines of symmetry has a rectangle?

A. 4

B. 3

C. 2

D. 1

28. A rectangular box has length 20 cm, width 6 cm and height 4 cm. Find how many cubes of side 2 cm that will fit into the box.

A. 120

B. 60

C. 30

D. 15

29. The interior angle of a regular polygon is 120°. How many sides has this polygon?

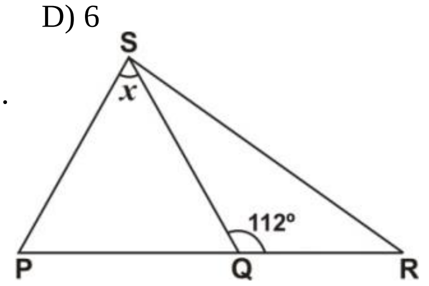
A) 3

B) 4

C) 5

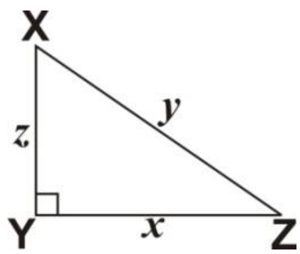
D) 6

30.



In the diagram above, length of PS = length of SQ and angle SQR = 112°. Find the value of x.
A. 68°
B. 56°
C. 46°
D. 44°

31. **XYZ** is a right-angled triangle with length of sides as shown.



Which of the following equations gives the value of z^2?

A. $z^2 = (x^2 + y^2)$
B. $z^2 = (x - y)$
C. $z^2 = (y^2 - x^2)$
D. $z^2 = (x^2 - y^2)$

32. Express 7 min. 30 sec. as a percentage of 1 hour.
A. 2.5%
B. 7.5%
C. 11.7%
D. 12.5%

33. The point (4,5) is translated to the point (3,1). What is the translation vector?

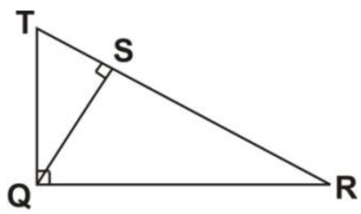
A. $\begin{pmatrix} -1 \\ 4 \end{pmatrix}$

B. $\begin{pmatrix} 1 \\ 4 \end{pmatrix}$

C. $\begin{pmatrix} 1 \\ -4 \end{pmatrix}$

D. $\begin{pmatrix} -1 \\ -4 \end{pmatrix}$

34. In the diagram below, triangle QRT is the enlargement of QST.



Which side of triangle QRT corresponds to side QT of triangle QST?

A. TS
B. TR
C. QR
D. SR

35.

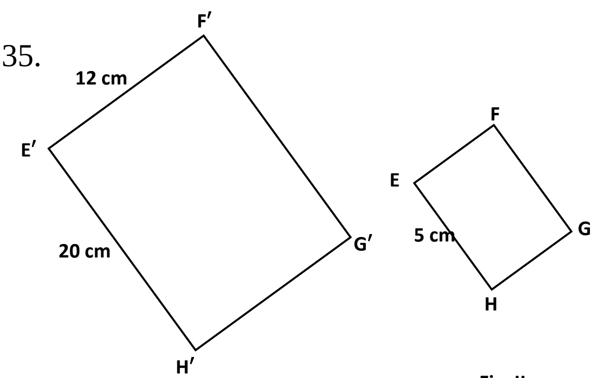


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Fig. II

Fig. I

In the diagrams above Fig. I is an enlargement of Fig. II.

Find the side EF of Fig. II

A. 20 cm
B. 5 cm
C. 4 cm
D. 3 cm

36. Express 4037 in standard form

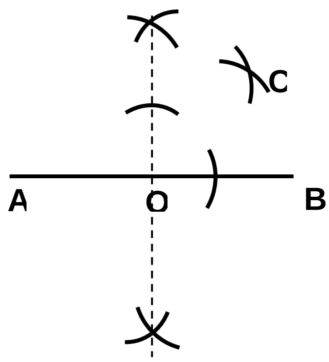
A. 4.037×10^{-4}

B. 4.037×10^{-3}

C. 4.037×10^{3}

D. 4.037×10^{4}

37. Which of the following angles can be constructed by using the arcs at point C in the diagram below?



A. 30°

B. 45°

C. 60°

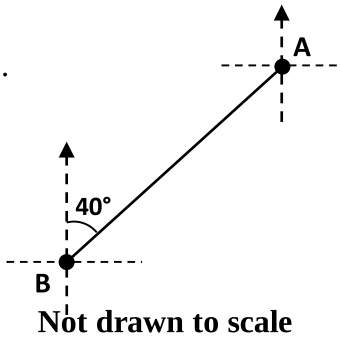
D. 75°

38. Given that vector **a** $= \begin{pmatrix} -5 \\ 12 \end{pmatrix}$ and **b** $= \begin{pmatrix} 10x \\ 12 \end{pmatrix}$ find the value of x if **a** = **b**.
A. -2

B. - ½

C. ½

D. 2

39. 

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In the diagram above, the bearing of point **B** from **A** is

A. 340°

B. 220°

C. 140°

D. 50°

40. Ama is 9 years older than Kwame. If Kwame is 18 years old, find the ratio of the age of Kwame to that of Ama.

A. 3 : 2

B. 1 : 3

C. 2 : 3

D. 2 : 1

PB PAGEZ EXAMINATION

FREE MOCK QUESTIONS_2

MATHEMATICS Marking Scheme

OBJECTIVE TEST (40 MARKS)

PAPER ONE

1. D	6. B	11. C	16. A	21. D	26. C	31. C	36. C
2. C	7. D	12. B	17. C	22. B	27. C	32. D	37. B
3. D	8. D	13. C	18. C	23. D	28. B	33. D	38. B
4. D	9. A	14. C	19. A	24. C	29. D	34. B	39. B
5. D	10. C	15. A	20. C	25. B	30. D	35. D	40. C

PAPER TWO [60 MARKS]

1. (a) $(m + n)(2x - y) - x(m + n)$

Method 1

$= (m + n)[2x - y - x]$ — Factorizing (m + n) out

$= (m + n)(2x - x - y)$

$= \underline{(m + n)(x - y)}$

NB: $(m + n)(x - y) = (x - y)(m + n)$

Method 2

$(m + n)(2x - y) - x(m + n)$

$= 2mx - my + 2nx - ny - mx - nx$ — Expanding

$= 2mx - mx + 2nx - nx - my - ny$ — Grouping like terms & simplifying

$= mx + nx - my - ny$ — Factorizing

$= x(m + n) - y(m + n)$ — Factorizing (m+n) out

$= \underline{(m + n)(x - y)}$

1 (b) (i)

A = {2, 4, 6, 8, 10, 12, 14, 16, 18}

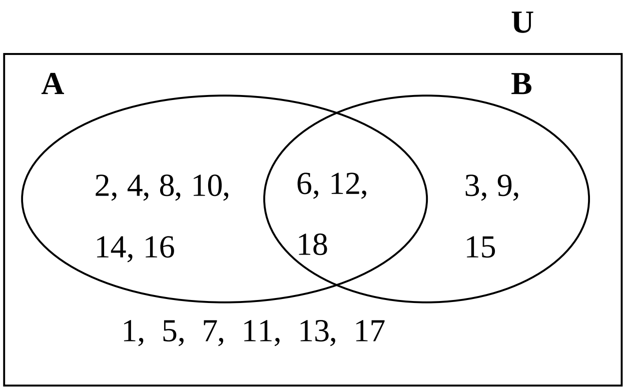
B = {3, 6, 9, 12, 15, 18}

$A \cap B$ = {6, 12, 18}

$A \cup B$ = {2, 3, 4, 6, 8, 9, 10, 12, 14, 15, 16, 18}

$(A \cup B)'$ = {1, 5, 7, 11, 13, 17}

1(b) (ii)



1 (c)

$$\begin{pmatrix}5\\3\end{pmatrix} + 2\begin{pmatrix}x\\y\end{pmatrix} - \begin{pmatrix}1\\-7\end{pmatrix} = 0$$

Using the horizontal (x) component, we have

$$5 + 2x - 1 = 0$$
$$\Rightarrow \quad 2x = 1 - 5$$
$$\Rightarrow \quad \frac{2x}{2} = \frac{-4}{2}$$
$$\Rightarrow \quad \underline{\underline{x = -2}}$$

Solving for x

Using the vertical (y) component, we have

$$3 + 2y - (-7) = 0$$
$$\Rightarrow \quad 3 + 2y + 7 = 0$$
$$\Rightarrow \quad 2y + 10 = 0$$
$$\Rightarrow \quad 2y = -10$$
$$\Rightarrow \quad y = \frac{-10}{2}$$
$$\Rightarrow \quad \underline{\underline{y = -5}}$$

Solving for y

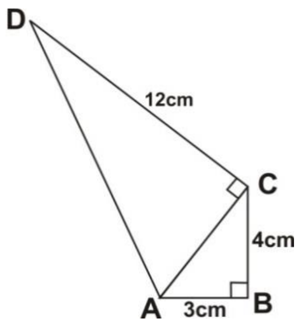
2. (a) 2,483.65 + 701.532 + 102.7

$$\begin{array}{r} 2483.65 \\ 701.532 \\ +\ 102.7 \\ \hline 3287.882 \\ \hline \end{array}$$

Ensure that the places of the addends are in line

$\approx$ $\underline{\underline{3287.9}}$ (one decimal place)

2 (b)



(i) Side **AC** is the hypotenuse of triangle ABC.

From the Pythagorean theorem,

$$|AC|^2 = |AB|^2 + |BC|^2$$

$$\Rightarrow \quad |AC|^2 = (3cm)^2 + (4cm)^2$$

$$\Rightarrow \quad |AC|^2 = 9cm^2 + 16cm^2$$

$$\Rightarrow \quad |AC|^2 = 25cm^2$$

$$\Rightarrow \quad |AC| = \sqrt{25cm^2}$$

$$\Rightarrow \quad |AC| = 5\ cm$$

Now, side **AD** is the hypotenuse of triangle ACD
From the Pythagorean theorem,

$$|AD|^2 = |AC|^2 + |CD|^2$$

$$\Rightarrow \quad |AD| = \sqrt{(5cm)^2 + (12cm)^2}$$

$$\Rightarrow \quad |AD| = \sqrt{169cm^2}$$

$$\Rightarrow \quad |AD| = 13cm$$

Hence the perimeter of ABCD

$$= |AB| + |BC| + |CD| + |DA|$$

$$= 3\,cm + 4cm + 12cm + 13cm$$

$$= \underline{\underline{32\,\text{cm}}}$$

The perimeter of ABCD is 32 cm

2 (b) (ii) Area of (ABCD $= \quad \Delta ABC + \Delta ACD)$

$$= \tfrac{1}{2}(b_1h_1) + \tfrac{1}{2}(b_2h_2)$$

$$= \tfrac{1}{2}(3cm)(4cm) + \tfrac{1}{2}(5cm)(12cm)$$

$$= 6cm^2 + 30cm^2$$

$$= \underline{\underline{36cm^2}}$$

The area of ABCD is 36 cm^2

3. (a)

$$\frac{2^7 \times 3^4 \times 5^3}{2^3 \times 3^2 \times 5^2}$$

$$= \frac{2^7}{2^3} \times \frac{3^4}{3^2} \times \frac{5^3}{5^2}$$

$$= 2^4 \times 3^2 \times 5$$

$$= 8 \times 9 \times 5$$

$$= 360$$

$$= \underline{\underline{3.6 \times 10^2}}$$

3 (b)

Distance ridden = x km

Distance walked = $\frac{1}{2}$ h × 6km/h = 3km

Total distance = 10 km

Dist. ridden + dist. walked = total dist.

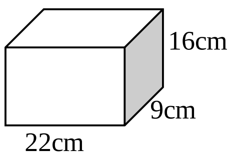
⇒ x km + 3 km = 10 km

⇒ x km = 10 km – 3km

⇒ x km = 7 km

The distance Kwame covered by bicycle is 7 km

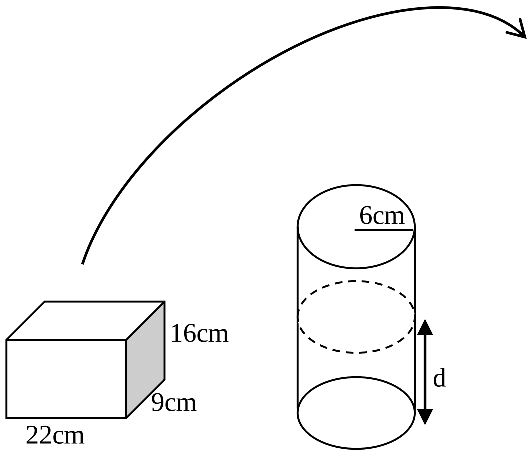
3 (c) (i)



Volume = length × width × height

$= 22cm \times 9cm \times 16cm$

$= \underline{\underline{3168cm^3}}$



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Let d = the depth of water in the cylinder

3 (c) (ii) **Method 1** (Using calculated volume of rectangular tank)

Vol. of water in rectangular tank = Vol. of water in cylinder

$\Rightarrow$ $3168cm^3 = \pi r^2 \times d$

$\Rightarrow$ $3168cm^3 = {}^{22}/_7 \times (6cm)^2 \times d$ — Substituting

$\Rightarrow$ $3168cm^3 = {}^{22}/_7 \times 36cm^2 \times d$

$\Rightarrow$ $\dfrac{3168\ cm^3}{\frac{22}{7} \times 36cm^2} = d$ — Dividing both sides by ${}^{22}/_7 \times 36cm^2$

$\Rightarrow$ $\dfrac{3168}{792/7}\ cm = d$ — Simplifying

$\Rightarrow$ $3168 \div \dfrac{792}{7}\ cm = d$

$\Rightarrow$ $3168 \times \dfrac{7}{792}\ cm = d$ — You may avoid the tedious simplification here by using Method 2 below

$\Rightarrow$ $28\ cm = d$

Hence the depth of water in the cylindrical container = 28cm

3(c)(ii) **Method 2** (Using the given dimensions of rectangular tank)

Vol. of water in cuboid = Vol. of water in cylinder

$\Rightarrow$ $l \times w \times h_{\text{cuboid}} = \pi r^2 \times d_{\text{cylinder}}$

$[22cm \times 9cm] \times 16cm = [{}^{22}/_7 \times (6cm)^2] \times d$ — *Substituting and solving for d*

$\Rightarrow$ $[22cm \times 9cm] \times 16cm = (\frac{22}{7} \times 6cm \times 6cm) \times d$

$\Rightarrow$ $\dfrac{22cm \times 9cm \times 16cm}{\frac{22}{7} \times 6cm \times 6cm} = d$ — Simplifying

$$\Rightarrow \quad \frac{22cm \times 9cm \times 16cm \times 7}{22 \times 6cm \times 6cm} = d$$ Simplifying (by 'cancellation')

$$\Rightarrow \quad \underline{\underline{28\,cm}} = d$$

$\therefore$ The depth (d) of water in the cylindrical container = $\underline{\underline{28cm.}}$

4. **(a)** **(i)** Let length = l, width = w, height = h

Total surface area = 2lw + 2lh + 2wh,

= (2× 8cm × 5cm) + (2 × 8cm × 10cm) + (2 × 5cm × 10cm)

= $80cm^2$ + $160cm^2$ + $100cm^2$

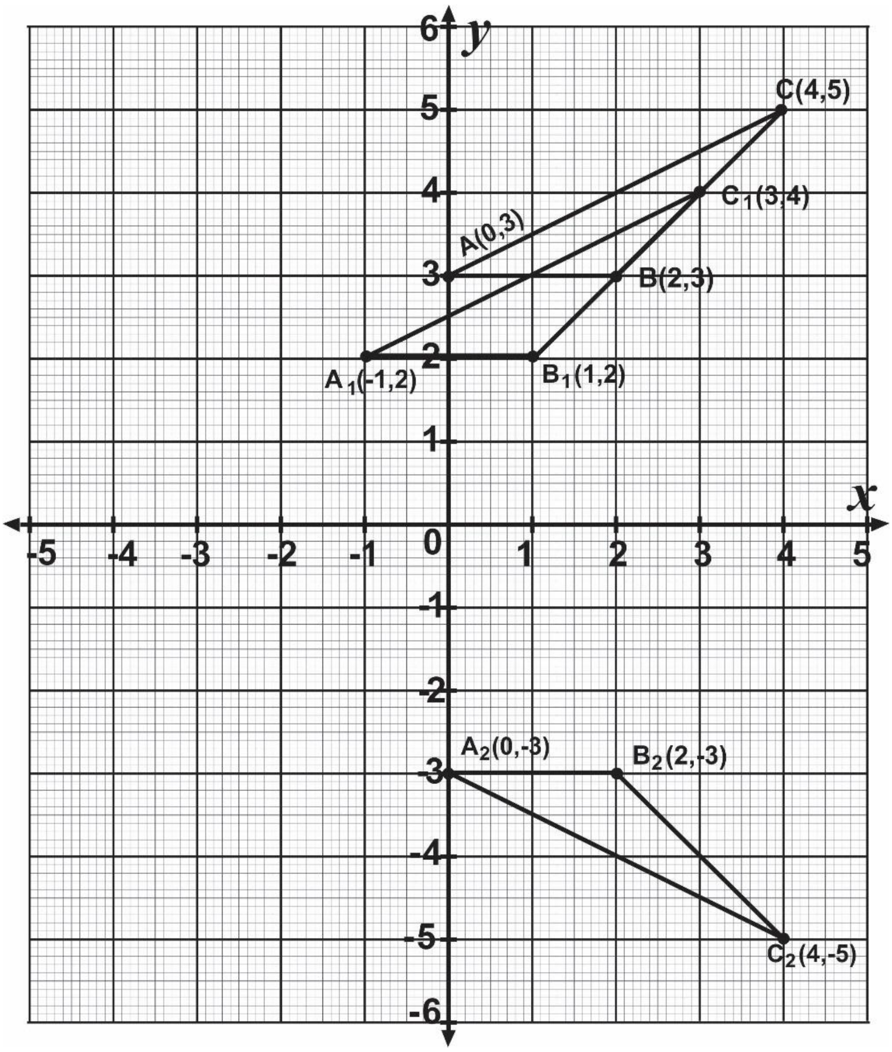
= $\underline{\underline{340\ cm^2}}$

(ii) Volume = l × w × h

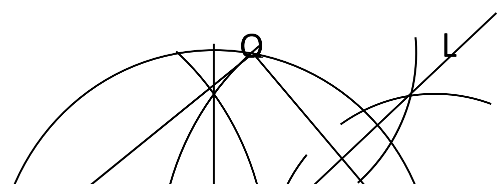
= 8cm × 5cm × 10cm

= $\underline{\underline{400\ cm^3}}$

4 (b)



5. **(a)**



(b) **(i)** Radius = 4.0cm (or 4.1cm)

(ii) If $r = 4.0$ cm

$$
\begin{aligned}
C &= 2\pi r \\
&= 2 \times 3.14 \times 4 \text{ cm} \\
&= \underline{\underline{25.12 \text{ cm}}}
\end{aligned}
$$

Or if $r = 4.1$cm

$$
\begin{aligned}
C &= 2 \times 3.14 \times 4.1 \text{ cm} \\
&= \underline{\underline{25.748 \text{ cm}}}
\end{aligned}
$$

6. **(a)**

$6xy - 3y + 4x - 2$

$3y(2x - 1) + 2(2x - 1)$

$\underline{\underline{(2x - 1)(3y + 2)}}$

(b) The length of the ladder AB forms the hypotenuse of the right-angled triangle ABP
From the Pythagorean theorem,

$$
\begin{aligned}
|AB|^2 &= |AP|^2 + |BP|^2 \\
&= (6)^2 + (8)^2 \\
&= 36 + 64 \\
|AB|^2 &= 100 \\
\Rightarrow |AB| &= \sqrt{100} \\
&= \underline{\underline{10 \text{ m}}}
\end{aligned}
$$

The length of the ladder AB is 10 m

6. (c) **<u>Method 1</u>**

$$
\begin{aligned}
\text{No. of bags sold in January} &= \frac{2}{3} \times 1800 \\
&= 2 \times 600 \\
&= \underline{\underline{1200}}
\end{aligned}
$$

$$
\begin{aligned}
\text{No. of bags left} &= 1800 - 1200 \\
&= \underline{\underline{600}}
\end{aligned}
$$

$$
\begin{aligned}
\text{No. of bags sold in February} &= \frac{3}{4} \times 600 \\
&= 3 \times 150 \\
&= \underline{\underline{450}}
\end{aligned}
$$

(i) (α) Fraction of bags sold in February $= \dfrac{\text{No. of bags sold in February}}{\text{Total no. of bags}}$

$= \dfrac{450}{1800}$

$= \underline{\underline{\dfrac{1}{4}}}$

(i) (β) Fraction of bags sold in Jan and Feb $= \dfrac{1200 + 450}{1800}$

$= \dfrac{1650}{1800}$

$= \underline{\underline{\dfrac{11}{12}}}$

(ii) No.of bags left unsold by the end of February $= 1800 - 1650$

$= \underline{\underline{150}}$

6. (c) **Method 2**

Fraction sold in January $= \underline{\underline{\dfrac{2}{3}}}$

Fraction left $= 1 - \dfrac{2}{3}$

$= \dfrac{1}{1} - \dfrac{2}{3}$

$= \dfrac{3-2}{3}$

$= \dfrac{1}{3}$

(i) (α) Fraction sold in February $= \frac{3}{4}$ of fraction left

$= \dfrac{3}{4} \times \dfrac{1}{3}$

$= \dfrac{1}{4} \times \dfrac{1}{1}$

Fraction sold in Feb. $= \underline{\underline{\dfrac{1}{4}}}$

(i) (β) Fraction sold In January and February

$= \dfrac{2}{3} + \dfrac{1}{4}$

$$= \frac{4(2)+3(1)}{12}$$

$$= \frac{8+3}{12} \qquad = \underline{\underline{\frac{11}{12}}}$$

(ii) No. of bags left unsold by end of February

= Fraction left unsold × Total no. of bags

But fraction left unsold $= 1-\frac{11}{12}$

$$= \frac{12}{12}-\frac{11}{12}$$

$$= \frac{1}{12}$$

Therefore No. of bags left unsold by end of February

$$= \frac{1}{12}\times 1800\,\text{bags}$$

= 1 × 150 bags

= <u>150 bags</u>