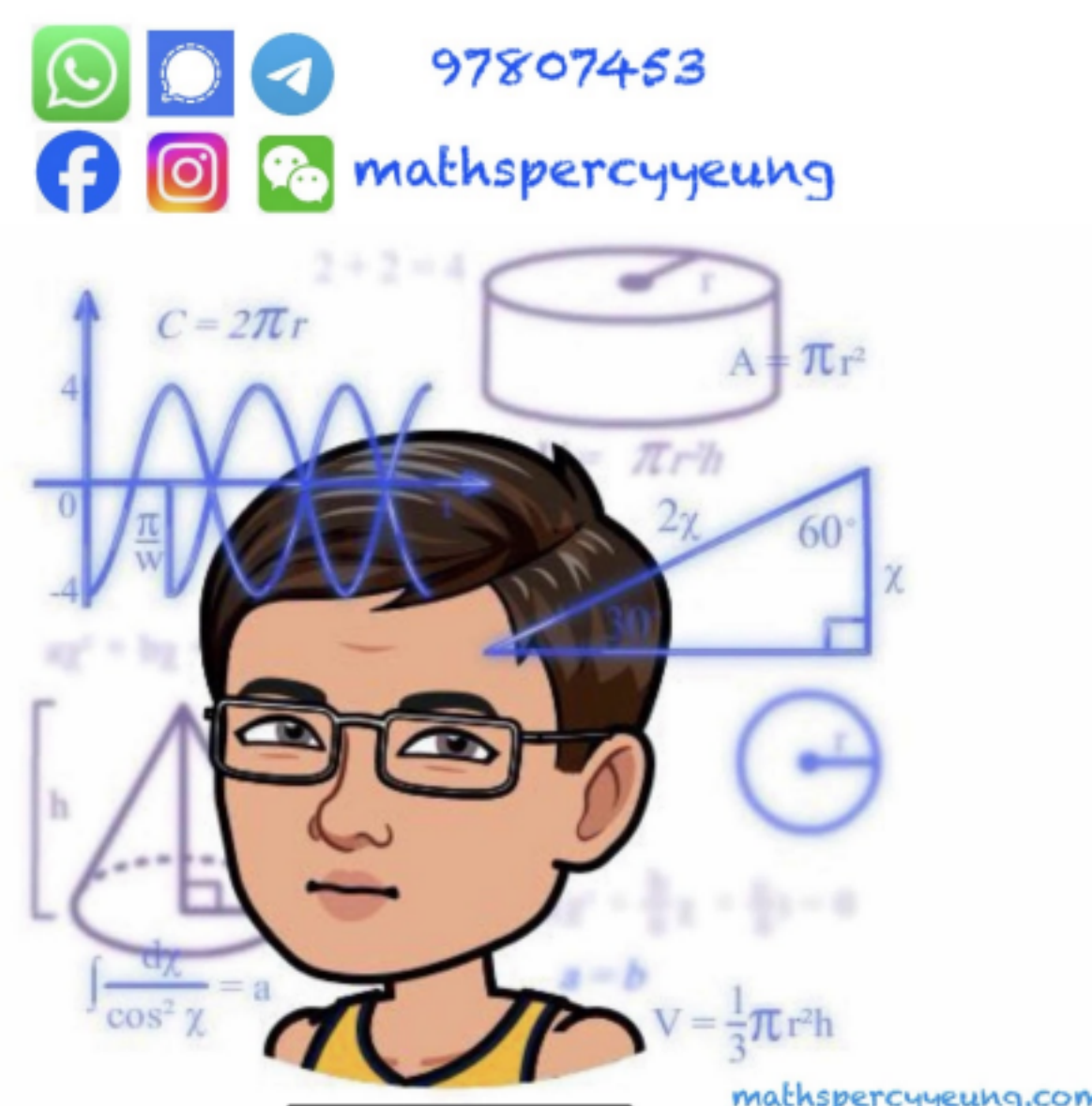


WKF F3 Final 2025-26 P2

Term 2 Assessment 2025 – 2026

Grade: G9Subject: MathematicsPaper: IIDate: - 1 JUN 2026Time Allowed: 50 minutesMarks: / 30

Parent's Signature _____



INSTRUCTIONS

- (1) There are 30 questions in the paper. You should check that all the questions are there. Look for the words '**END OF PAPER**' after the last question.
- (2) Each question carries 1 mark.
- (3) **ANSWER ALL QUESTIONS.** You are advised to use an HB pencil to mark all the answers on the MC Answer Sheet, so that wrong marks can be completely erased with a clean rubber.
- (4) You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARK** for that question.
- (5) No mark will be deducted for the wrong answers.
- (6) Use of an HKEAA approved calculator is allowed.

The diagrams in this paper are not necessarily drawn to scale.

Choose the best answer for each question.

1. $\left(\frac{1}{2}\right)^{320} \times (-8)^{105} =$

A. -2^{215} .

B. -32 .

C. $-\frac{1}{4}$.

D. $-\frac{1}{32}$.

2. If n is an integer, then $\frac{5^{n+2} + 5^{n-1}}{5^{n+1} - 5^n} =$

A. 1.

B. $\frac{25}{4}$.

C. $\frac{63}{10}$.

D. 5.

3. Express $15 \times 2^8 - 2^7$ as a binary number.

A. 11101000000_2

B. 111001000000_2

C. 111010000000_2

D. 111110000000_2

4. Factorize $9 - x^2 - y^2 + 2xy$.

A. $(3 - x - y)(3 - x + y)$

B. $(3 - x - y)(3 + x - y)$

C. $(3 - x - y)(3 + x + y)$

D. $(3 + x - y)(3 - x + y)$

5. Which of the following is **NOT** a factor of $16a^4 - 54a$?

A. $2a$

B. $2a + 3$

C. $2a - 3$

D. $4a^2 + 6a + 9$

6. If x is a positive integer satisfying the inequality $3 - \frac{2-x}{4} < \frac{7}{2}$, find the greatest possible value of x .

A. 3

B. 5

C. 7

D. 9

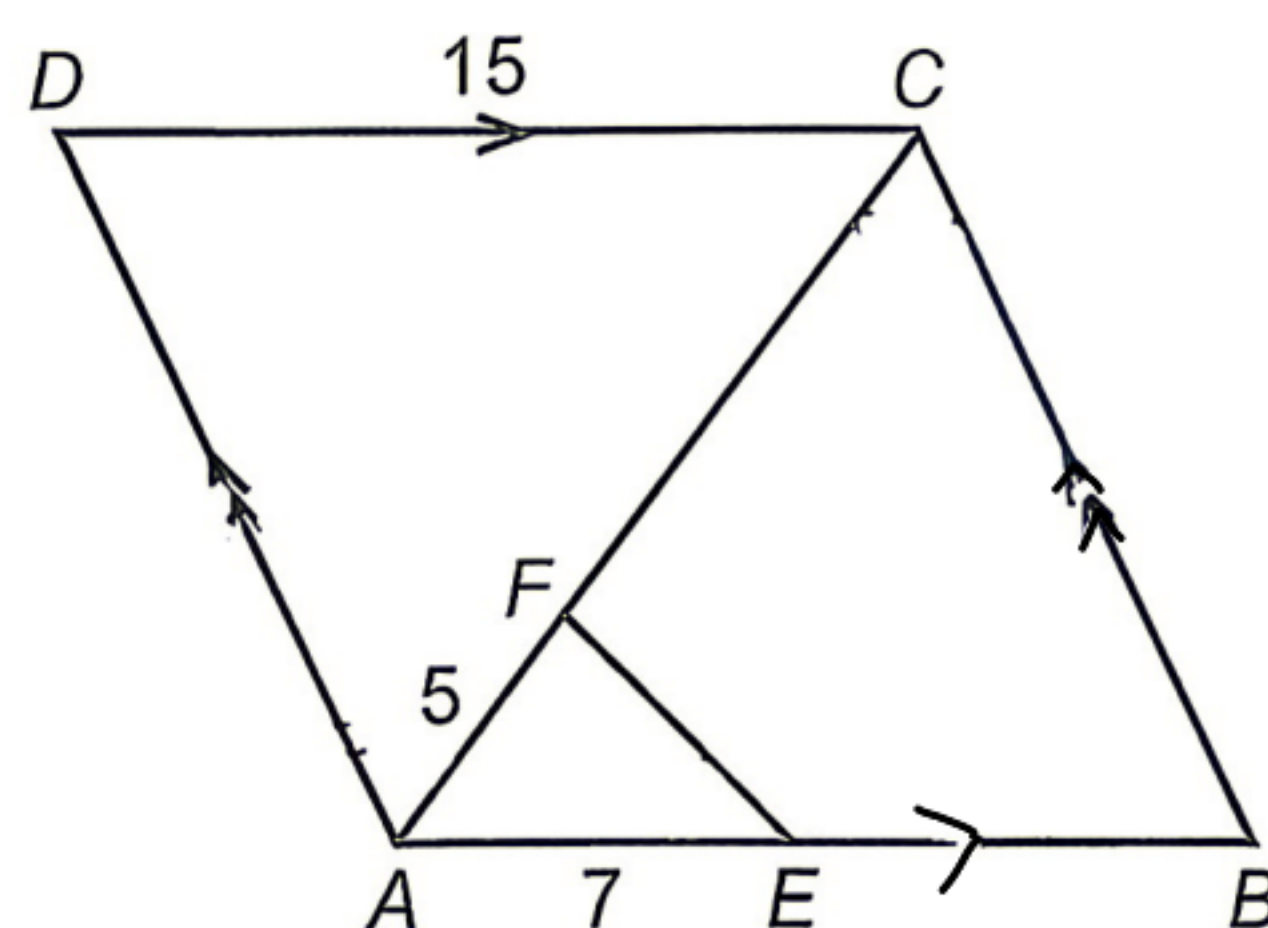
7. In a shop, the price of each apple is \$4 and the price of each watermelon is \$16. Katy has \$100 and wants to buy 4 apples and some watermelons from the shop. After buying the fruits, she has more than \$10 left. At most how many watermelons does she buy?
- A. 3
- B. 4
- C. 5
- D. 6
8. If $0 < x < y$ and z is a negative number, which of the following must be true?
- A. $xz < yz$
- B. $xz^2 < yz^2$
- C. $x(z - 4) < y(z - 4)$
- D. $\frac{z}{x} > \frac{z}{y}$
9. The charge for each unit of electricity is increased by 15%. A hotel reduces its electricity consumption by 20%. Find the percentage change in the electricity charge of the hotel.
- A. -8%
- B. -2%
- C. +2%
- D. +8%

10. Miss Lee deposits \$24 000 in a bank and the interest is compounded quarterly. If an interest of \$482.4 will be obtained after half a year, find the interest rate per annum.

A. 1.005%
 B. 2.02%
 C. 4%
 D. 8.04%

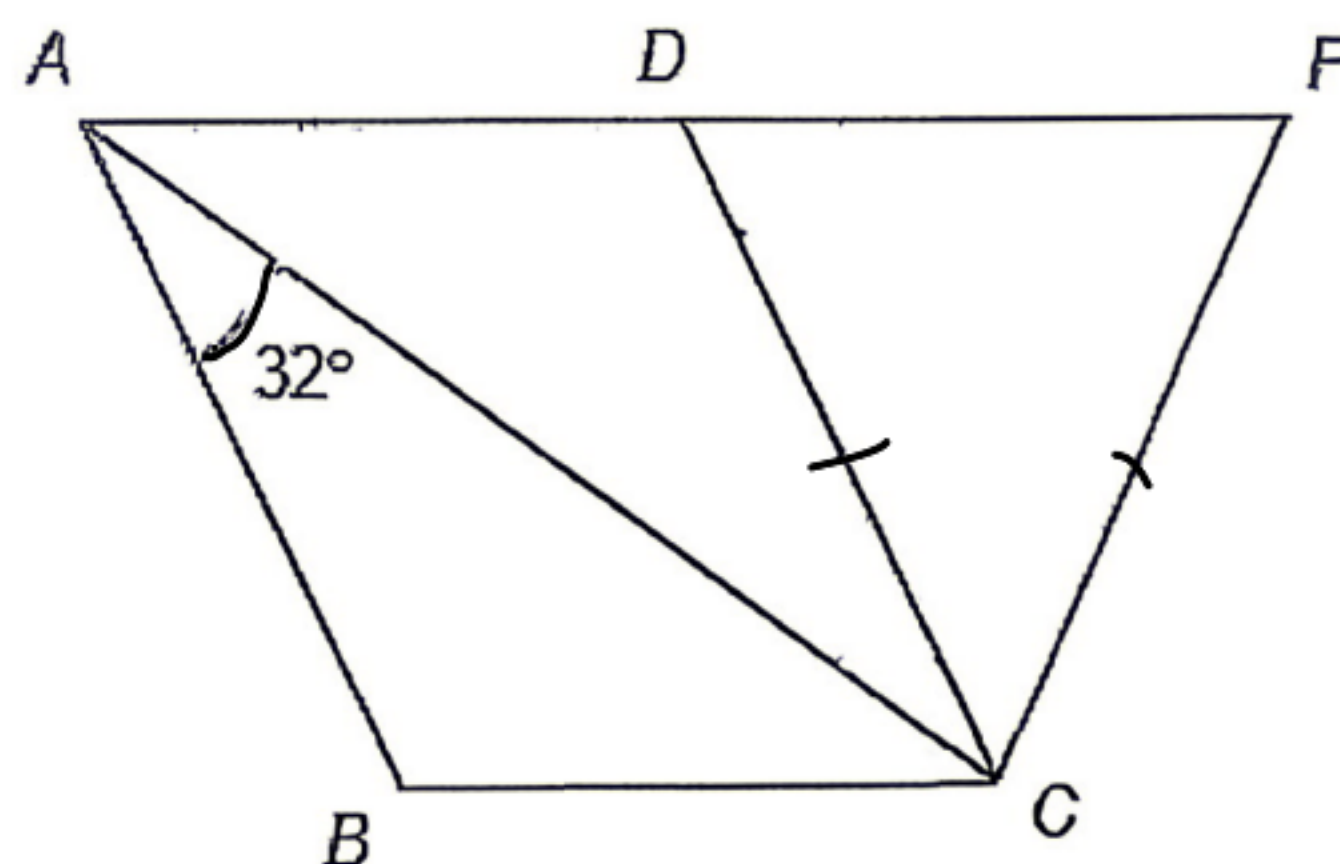
11. In the figure, $ABCD$ is a parallelogram. AEB and AFC are straight lines, where $\angle AEF = \angle ACB$. Find the length of AC .

A. $10\frac{5}{7}$
 B. 15
 C. 16
 D. 21



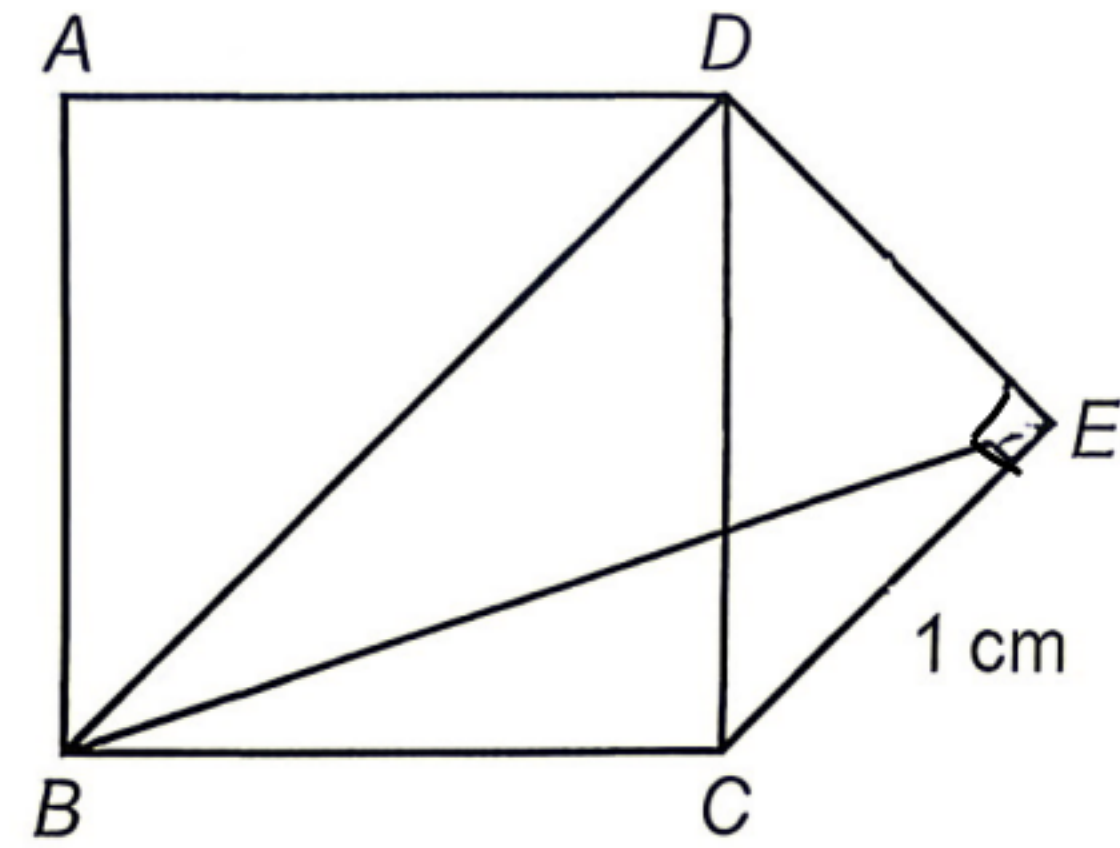
12. In the figure, $ABCD$ is a rhombus and ADF is a straight line. If $\angle BAC = 32^\circ$ and $CD = CF$, find $\angle DCF$.

A. 52°
 B. 56°
 C. 62°
 D. 64°



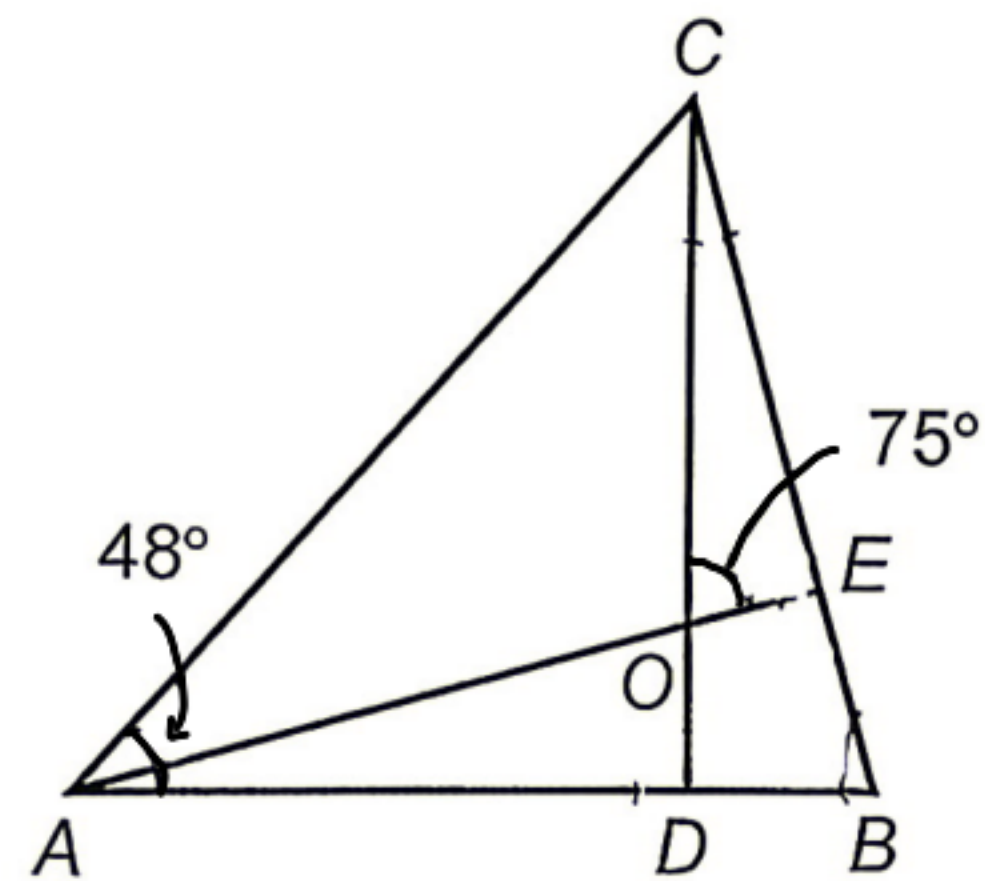
13. In the figure, $ABCD$ is a square and $\triangle CDE$ is a right-angled isosceles triangle. Find BE .

- A. $\sqrt{3}$ cm
 B. 2 cm
 C. $\sqrt{5}$ cm
 D. $(\sqrt{2} + 1)$ cm



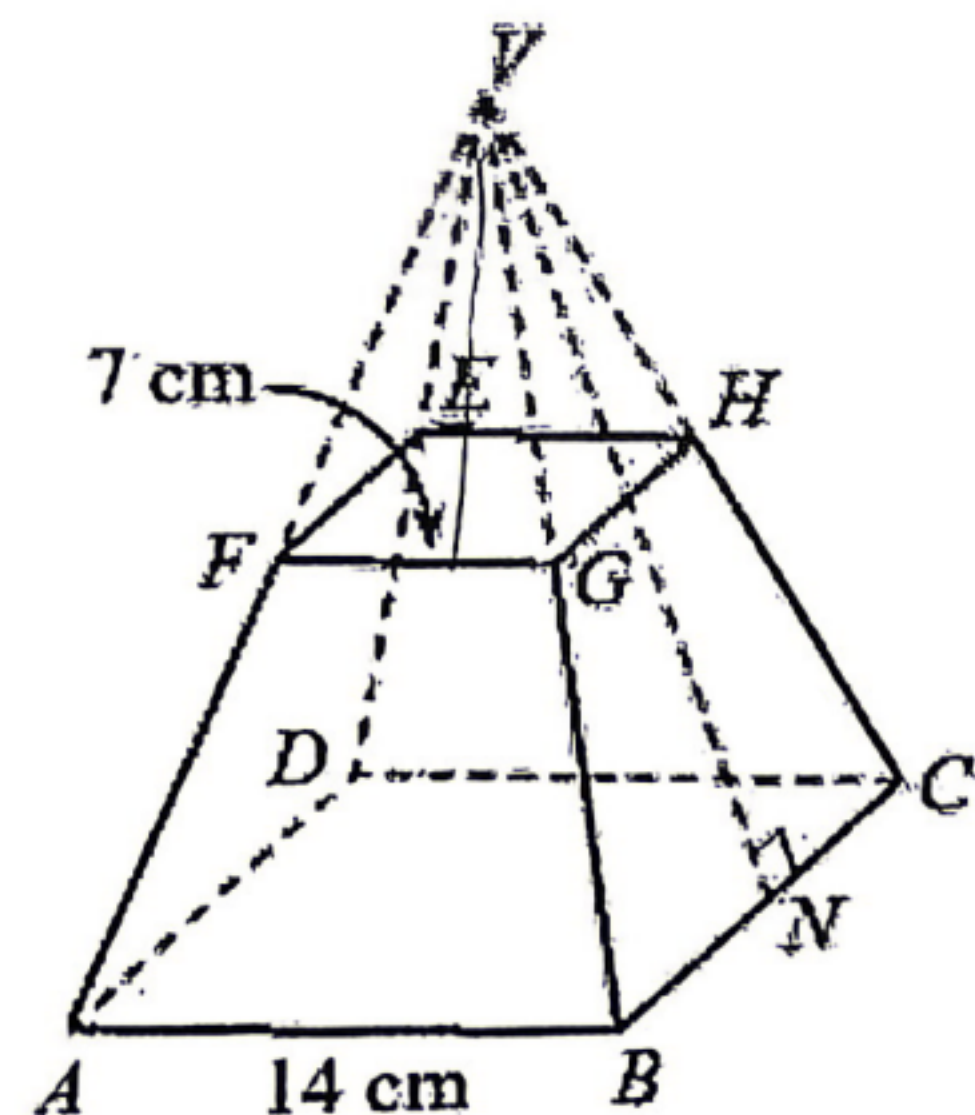
14. In the figure, ADB , AOE , BEC and COD are straight lines. O is the orthocentre of $\triangle ABC$, $\angle CAD = 48^\circ$ and $\angle COE = 75^\circ$. Find $\angle ACB$.

- A. 27°
 B. 42°
 C. 57°
 D. 66°



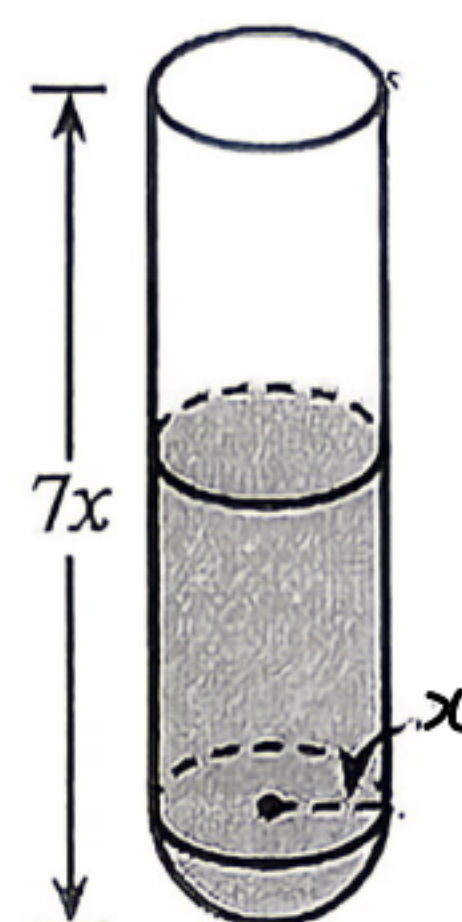
15. The figure shows a frustum of a regular pyramid. Its upper base and lower base are squares of sides 7 cm and 14 cm respectively. Given that $VN = 25$ cm, find the volume of the frustum.

- A. 784 cm^3
 B. 1372 cm^3
 C. 1449 cm^3
 D. 1594 cm^3



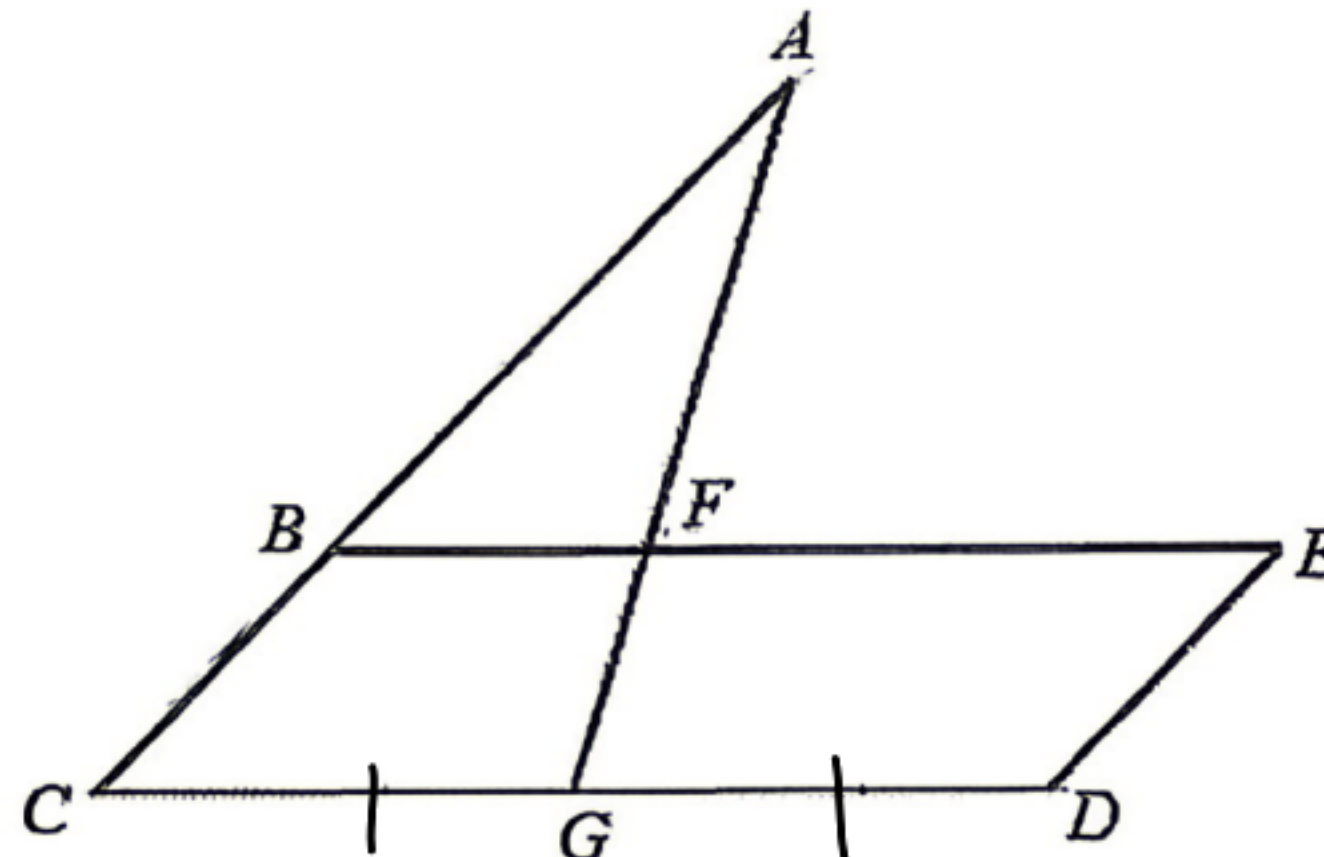
16. In the figure, a test tube whose shape is a cylinder with a hemisphere at one end is placed vertically. The height of the test tube is $7x$, where x is the radius of the hemisphere. If the volume of water in the test tube occupies half of the capacity in the test tube, find the area of the surface of the test tube in contact with water.

- A. $\frac{16}{3}\pi x^2$
 B. $7\pi x^2$
 C. $\frac{22}{3}\pi x^2$
 D. $\frac{28}{3}\pi x^2$



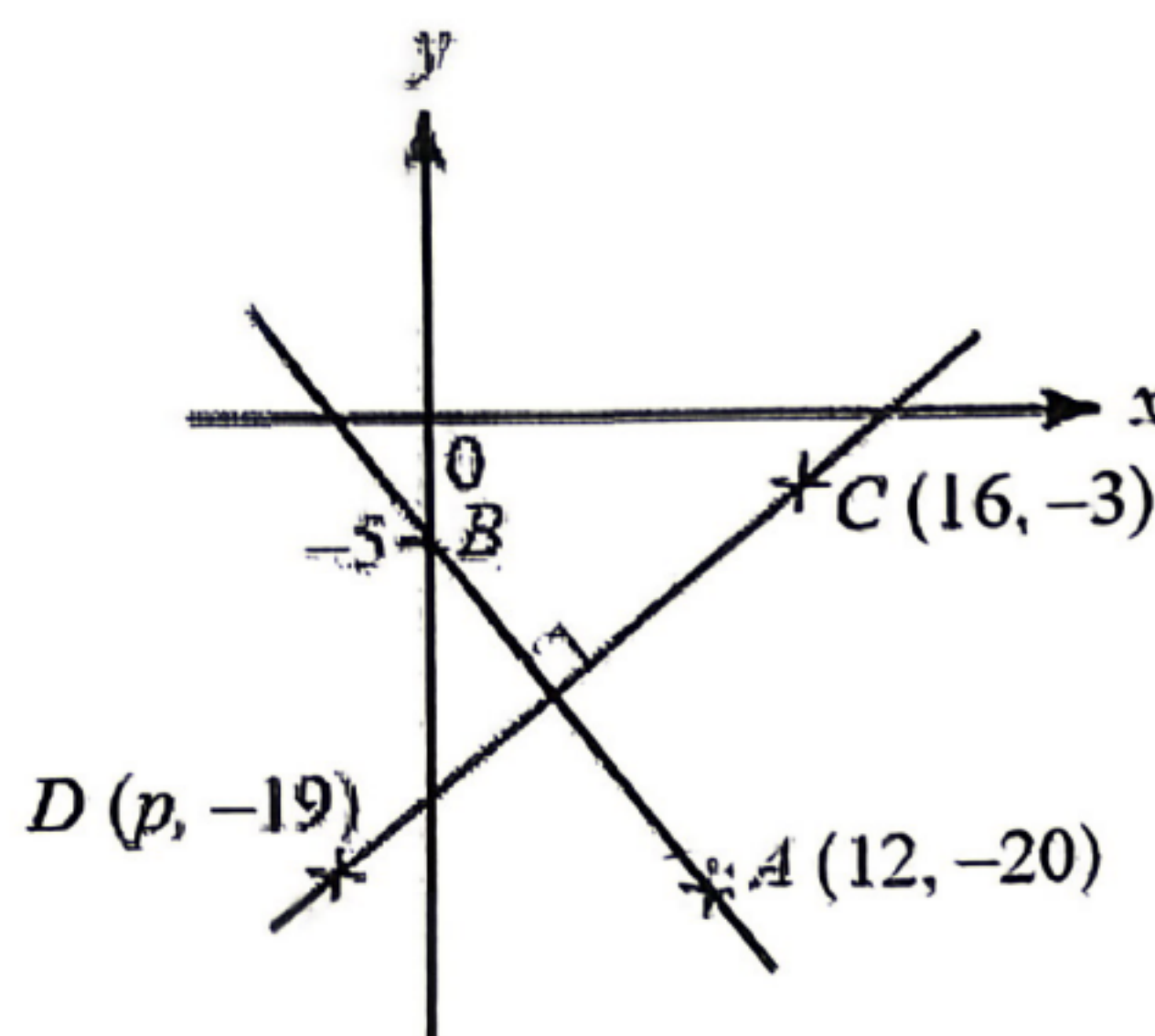
17. In the figure, $BCDE$ is a parallelogram. CB is produced to A such that $AB : BC = 2 : 1$. G is the mid-point of CD . AG and BE intersect at F . If the area of $\triangle ABF = 6 \text{ cm}^2$, find the area of $BCDE$.

- A. 7.5 cm^2
 B. 13.5 cm^2
 C. 15 cm^2
 D. 18 cm^2



18. Find the value of p in the figure.

- A. -36
 B. -12
 C. -8
 D. -4



19. Two points $P(-7, 8)$ and $Q(-4, -1)$ are given. If P is rotated clockwise about the origin through 90° to P' , find the distance between P' and Q .
- A. 7.21 units
B. 7.62 units
C. 14.2 units
D. 14.4 units
20. Two points $A(11, 18)$ and $B(-7, 6)$ are given. P is a point produced from AB such that $AP : BP = 4 : 1$, find the coordinates of P .
- A. $(-61, -30)$
B. $(-13, 2)$
C. $\left(-\frac{23}{2}, 3\right)$
D. $\left(-\frac{17}{5}, \frac{42}{5}\right)$
21. Given that $\tan(90^\circ - \theta) = \frac{4}{3}$, where θ is an acute angle, find the value of $\frac{8\sin\theta + 3\cos\theta}{\cos\theta}$.
- A. 2
B. 3
C. 6
D. 9

22. Which of the following are identities?

I. $\tan(90^\circ - \theta) \sin \theta = \cos \theta$

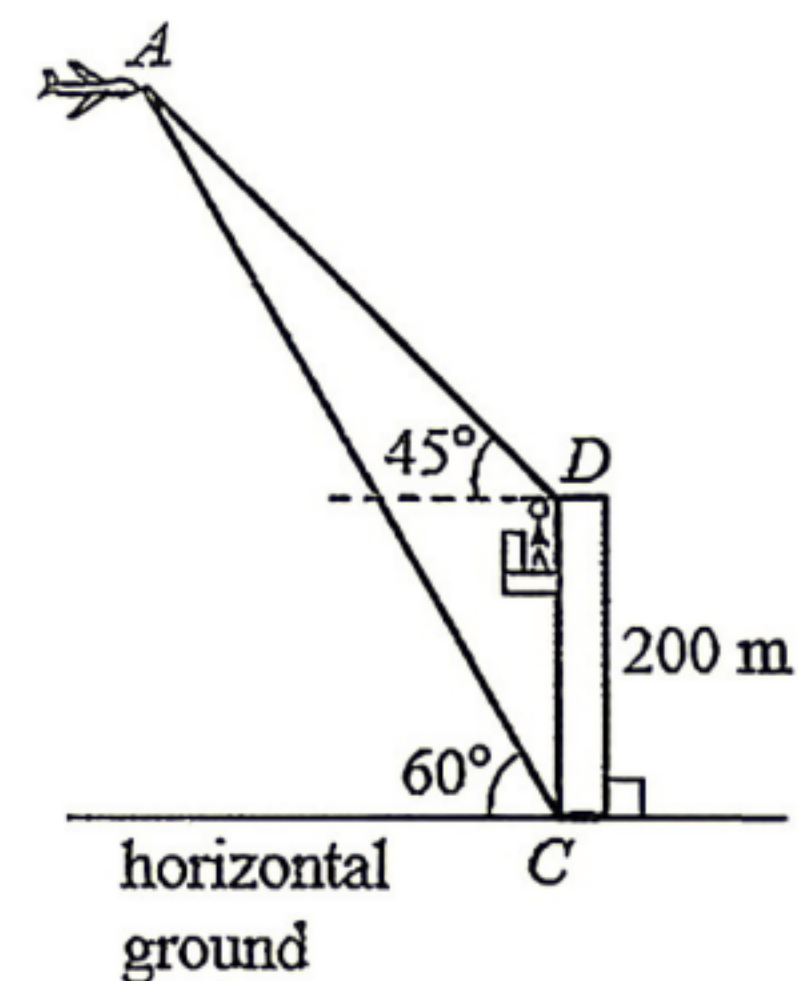
II. $1 + \tan^2 \theta = \frac{1}{\sin^2(90^\circ - \theta)}$

III. $(\cos \theta + \sin \theta)^2 = 1$

- A. I and II only
 B. I and III only
 C. II and III only
 D. I, II and III

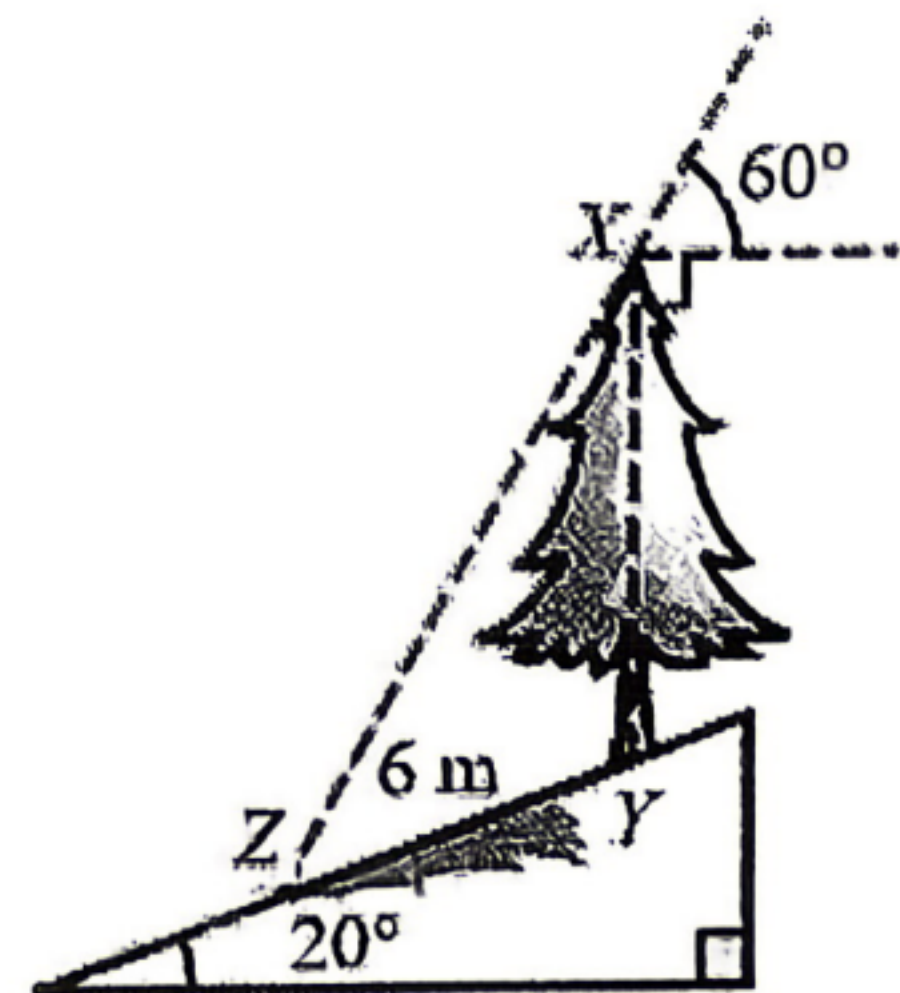
23. The figure shows an observatory tower CD of height 200 m in an airport. The angles of elevation of an aeroplane at A from C and D are 60° and 45° respectively. Find the height of A above the ground:

- A. 273 m
 B. 386 m
 C. 473 m
 D. 546 m



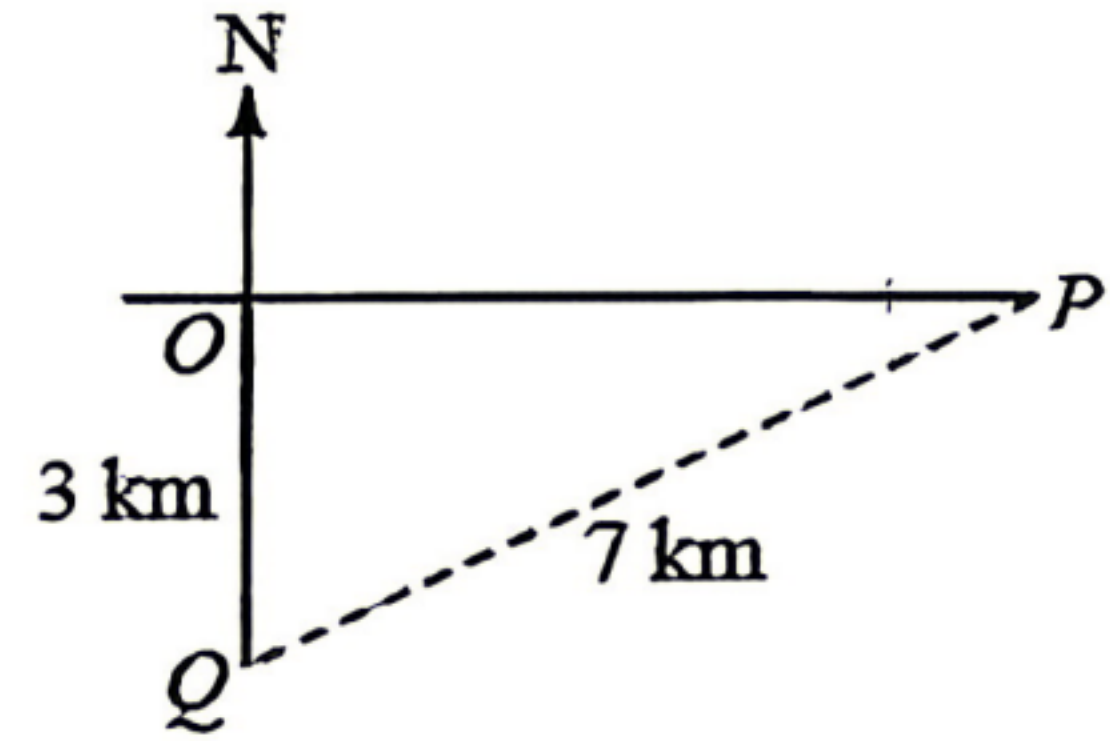
24. In the figure, a tree XY stands vertically on an inclined road with inclination 20° . When the angle of elevation of the sun is 60° , the length of shadow ZY of the tree on the inclined road is 6 m. Find the height of the tree.

- A. 1.50 m
 B. 4.13 m
 C. 7.71 m
 D. 7.88 m



25. In the figure, P is due east of O and Q is 3 km due south of O . If P and Q are 7 km apart, find the true bearing of Q from P , correct to the nearest degree.

- A. 025°
B. 065°
C. 215°
D. 245°



26. There are two Chinese restaurants, two Japanese restaurants and one Thai restaurant in a shopping mall. Amy and Ben each chooses one of the five restaurants randomly to have lunch. Find the probability that only one of them chooses a Japanese restaurant.

- A. $\frac{6}{25}$
B. $\frac{12}{25}$
C. $\frac{3}{5}$
D. $\frac{7}{10}$

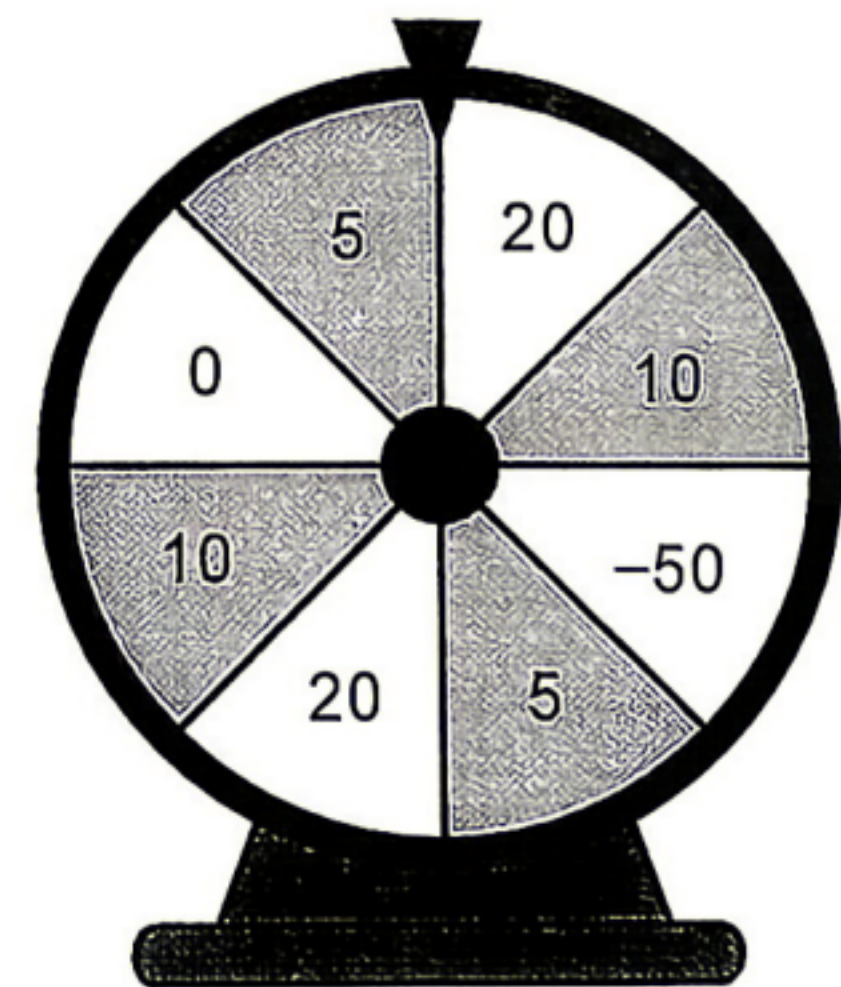
27. A bag contains a total of 36 balls and they are either yellow, red or white. A ball is drawn randomly from the bag with replacement. The process is repeated a number of times and the results obtained are as follows:

Colour of the ball drawn	Yellow	Red	White
Frequency	120	72	96

Estimate the number of yellow balls in the bag.

- A. 12
- B. 15
- C. 25
- D. 120
28. The figure shows a lucky wheel which is evenly divided into eight sectors. Alvin spins the wheel once and records the number on the sector indicated by the pointer when the wheel stops. Find the expected value of the number obtained by Alvin.

- A. 2.5
- B. 3.25
- C. 3.75
- D. 14.375



29. Consider the following positive integers.

$$4, 6, x, 7, 8, 9, 10, 14, y$$

If their mean is 7, which of the following must be true?

- I. Median = 7
 - II. $x + y = 5$
 - III. Mode = 4
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III

30. The consumer price indices of cities A and B are the weighted means of the relative prices of the items in the following table.

Item	Relative price of city A in 2024	Relative price of city B in 2024	Weight
Clothing	106	96	15%
Food	114	x	20%
Housing	120	125	30%
Transportation	98	104	20%
Entertainment	108	112	15%

If the consumer price indices of cities A and B in 2024 were the same, find x .

- A. 105
- B. 109
- C. 110.5
- D. 115.5

END OF PAPER