

UNIT-1
SECTION ---A (1 mark each)

1. Which is the negative rational number?
(a) 0 (b) -3/4 (c) 1/2 (d) -4/9
2. Which is the equivalent fraction of $\frac{2}{3}$?
(a) 12/20 (b) 6/10 (c) 16/24 (d) -2/5.
3. The absolute value of -3/2 is
(a) 3/2 (b) -3/2 (c) 3/-2 (d) -3
4. Find x if $\frac{8}{7} = \frac{x}{-35}$
(a) 40 (b) -40 (c) -35 (d) 56.
5. Which is the absolute of $-11/2$
a) 11/2 (b) 3/2 (c) 2/3 (d) -2/.
6. Write the standard form of $-25/65$
a) -65/25 (b) 5/13 (c) -5/13 (d) -50/130
7. Which of the following is an equivalent rational number of $\frac{-72}{180}$
a) $\frac{-36}{80}$ (b) $\frac{-8}{25}$ (c) $\frac{-9}{25}$ (d) $\frac{-24}{90}$
8. When $\frac{4}{-7}$ is written as a rational number with denominator 28, then the numerator is ...
a) 20 (b) -16 (c) -28 (d) 24
9. Which of the following is neither positive nor negative integer?
(a) 1000 (b) 100 (c) 10 (d) 0
10. A rational number $\frac{p}{q}$ is said to be in standard form if q is positive and H.C.F of p and q is
(a) 1 (b) 10 (c) -10 (d) -5
11. A rational number $\frac{p}{q}$ is said to be in standard form if
(i) q is positive (ii) HCF of p and q is 1 (iii) both (i) and (ii) (iv) none of these
12. Between two consecutive integers how many rational numbers are found
(i) one (ii) two (iii) infinitely many (iv) none of these
13. $\frac{p}{s} = \frac{x}{y}$ if
(i) $p = y$ (ii) $s = x$ (iii) $p \times y = s \times x$ (iv) none of these
14. When $\frac{3}{5}$ is written as a rational number with denominator 45 then the numerator is
a) 15 (b) 25 (c) 27 (d) 33
15. Every rational number is
(a) an integer (b) a fraction (c) a natural number (d) none of these
- 16) On a number line the length of the line segment joining 3 and -3 is ----units
(a) 6 (b) 3 (c) -3 (d) 0

17) On a numberline which of the following number lies to the right of 5

- (a) 0 (b) $\frac{-1}{2}$ (c) $\frac{15}{7}$ (d) $\frac{11}{2}$

SECTION ----B (2 marks each)

1. Represent the rational number on the number line: $5\frac{1}{3}$
2. Compare $\frac{4}{9}$ & $\frac{3}{7}$.
3. Find x such that the two rational numbers, $\frac{8}{7}$ and $\frac{x}{-35}$ become equivalent.
4. The sum of two rational numbers is -5. If one of the number is $\frac{2}{3}$, find the other
5. Represent $\frac{3}{5}$ and $\frac{-13}{3}$ on number line
6. Insert two rational numbers between $\frac{3}{4}$ and $-\frac{9}{8}$
7. Find a rational no between $\frac{1}{4}$ and $\frac{-3}{4}$.
8. Represent $\frac{-29}{4}$ on number line.
9. Represent the followings on the number line.
 - a) $3\frac{3}{5}$
 - b) $\frac{-25}{4}$
10. Fill in the blanks $104 \div \text{-----} = -4/9 = -100/\text{-----}$
11. Represent the rational numbers on a number line
 - a) $2/-3$
 - b) $-3/-5$
12. Write the rational numbers in standard form
 - (i) $\frac{15}{-40}$
 - (ii) $\frac{-27}{-243}$
13. Express $\frac{-21}{49}$ as a rational no. with denominator 7
14. Find x such that the rational nos. in $\frac{15}{x}$ and $\frac{-3}{8}$ are equivalent

SECTION--- C (4- marks each)

1. Arrange the following in ascending order:

$$\frac{4}{7}, \frac{5}{9}, \frac{2}{5}, \frac{1}{3}$$
2. Compare the numbers, $|\frac{-8}{-9}|$, $|\frac{-3}{5}|$
3. Arrange the following rational number in descending order.
 - (i) $-3/10, -7/5, 9/-15, 18/30$
 - (ii) $-3/4, -5/-12, -7/16, 3/2$
4. (a) Find the missing number:- $\frac{105}{\text{---}} = \frac{\text{---}}{-99} = \frac{-5}{-11}$
 (b) Compare $:-\frac{5}{7}$ and $\frac{9}{-13}$
5. Find any four rational numbers between $\frac{-2}{3}$ and $\frac{1}{2}$.
6. Arrange the following rational numbers in descending order-
 $7/-5, 15$, $-18/-30$, $3/-10$

7. Represent the following on the number line.

a) $\frac{2}{3}$

b) $-\frac{25}{6}$

8.

Represent on number line

(a) $\frac{3}{4}$

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

SECTION--- D (6- marks each)

1. Arrange in descending order $\frac{2}{5}$, $\frac{-1}{2}$, $\frac{8}{-15}$, $\frac{-3}{-10}$

2. (i) Compare the rational numbers $-4/-9$ and $5/-6$

(ii) On number line what is the length of line segment joining $1/2$ and $-1/2$

(iii) Express $4/-7$ as a rational number with denominator -28

3. a) Express $\frac{90}{216}$ as a rational no with numerator 5

b) Find x such that the rational numbers $\frac{x}{6}$ and -13 become equivalent.

4 a) Arrange the following rational numbers in descending order .

$\frac{-4}{9}$, $\frac{5}{-12}$, $\frac{7}{-18}$, $\frac{2}{-3}$

b) Find the value of ' X ' such that the rational numbers $\frac{-5}{7}$ & $\frac{x}{28}$ are equivalent

5. Find equivalent forms of the rational numbers having a common denominator $5/12$, $7/4$, $9/60$, $11/3$

6. (i) Express $\frac{-5}{18}$ as a rational number with

a) Denominator (-54)

b) Numerator 20

(ii) Find X such that $\frac{-4}{9} = \frac{x}{-81}$

7. Arrange the following in ascending order: $\frac{-7}{10}$, $\frac{8}{-15}$, $-\frac{19}{30}$, $\frac{-2}{-5}$

a) Arrange $\frac{4}{7}$, $\frac{5}{9}$, $\frac{2}{5}$ in ascending order.

8

b) Fill in the blanks

$\frac{36}{\underline{\quad}} = \frac{-4}{9} = \frac{4}{-18}$

UNIT—2

SECTION—A (1- mark each)

1. Reciprocal of $2\frac{1}{3}$ is (a) $3\frac{1}{2}$ (b) $7/3$ (c) $-2\frac{1}{3}$ (d) $5/3$

2. Which is the identity element of addition?

(a) 1

(b) 0

(c) 10

(d) 5

3. Which is the identity element under multiplication?

- (a) 1 (b) 0 (c) 10 (d) 5

4. Which integer has no reciprocal?

- (a) 1 (b) 0 (c) 10 (d) 5

5. Which is the additive inverse of -6 ?

- (a) -1 (b) 0 (c) 6 (d) None

6. The multiplicative inverse of $\frac{-3}{4}$ is

- a) $\frac{3}{4}$ b) $\frac{4}{3}$ c) $\frac{-4}{3}$ d) None of these

7. $(-5\frac{1}{3}) \times \dots = 1$

- a) $-3\frac{1}{5}$ b) $\frac{-3}{16}$ c) $\frac{-16}{3}$ d) None of these

8. If x and y are two rational numbers then $(x+y)/2$ is what type of number?

- a) irrational b) integer c) rational d) real

9. $\frac{-1}{16} \times \dots = 1$

- a) -16 b) 16 c) 8 d) -8

10. The reciprocal of $-\frac{4}{3} \times \frac{-5}{4}$ is

- a) $\frac{3}{5}$ b) $\frac{5}{3}$ c) $\frac{-3}{5}$ d) none

11. By taking $x = -\frac{5}{8}$, $y = \frac{2}{7}$, $z = -\frac{1}{4}$, verify that $x \div (y - z) \neq (x \div y) - (x \div z)$

12. Reciprocal of negative rational number is

- (a) Positive (b) Zero (c) Negative (d) None of these

13) The reciprocal of $\frac{-4}{3}$ is

- (a) $\frac{-3}{4}$ (b) $\frac{4}{3}$ (c) $\frac{4}{-3}$ (d) $\frac{-3}{-4}$

SECTION—B (2- marks each)

1. The sum of two rational numbers is 1. If one of the number is $-\frac{3}{7}$. Find the other.

2. Find the two rational numbers between $\frac{1}{4}$ & $\frac{3}{4}$

3. Subtract : $-\frac{2}{9}$ from $\frac{7}{6}$

4. Find the reciprocal of $\frac{-2}{3} \times \frac{5}{7} + \frac{2}{9} \div \frac{1}{3} \times \frac{6}{7}$

5. Verify that $(x \times y)^{-1} = (x^{-1}) \times (y^{-1})$ by taking $x = \frac{1}{2}$ and $y = \frac{1}{2}$

6. With what number should we divide $\frac{-3}{7}$, so that the quotient be $\frac{21}{5}$.

7. Write the standard form of the following rational numbers.

a) $\frac{98}{-112}$

b) $\frac{-63}{-72}$

8. Fill in the blanks : $\frac{105}{\dots\dots\dots} = \frac{-5}{-11} = \frac{\dots\dots\dots}{-99}$

9. Subtract $-1/9$ from $3/5$

10. Find two rational numbers between $3/7$ and $-11/7$

11. The sum of two rational numbers is $\frac{-5}{7}$. If one of them is $\frac{-2}{5}$, find the other.

12. Find two rational numbers between $\frac{-5}{7}$ and $\frac{3}{14}$.

13. Find any two rational number between 0 and 1.

14. The sum of two rational number is -5 . If one of the number is $\frac{2}{3}$. Find the other number?

15. Find the value of $\frac{3}{5} + \frac{5}{4} + \frac{-1}{14} + \frac{-3}{8}$

16. Simplify and express the result in standard form.

$$\frac{-4}{3} + \frac{3}{5} - \frac{2}{10}$$

SECTION—C (4- marks each)

1. Show of $\frac{3}{5} \left(-\frac{1}{7} - \frac{5}{14} \right) = \frac{3}{5} \times \frac{-1}{7} - \frac{3}{5} \times \frac{5}{14}$

2. Insert three rational numbers between $\frac{-7}{10}$ and $\frac{11}{10}$

3. Divide the difference of $\frac{12}{5}$, $\frac{-16}{20}$ by their product.

4. i) Divide 32.768 by 8

ii) Multiply 0.84×8.8

5. Verify $x + y = y + x$ by taking $x = \frac{5}{7}$ and $y = \frac{-3}{2}$

6. For $x = \frac{-5}{11}$ & $y = \frac{7}{3}$, Verify that $(x \div y)^{-1} = x^{-1} \div y^{-1}$

7. Simplify and express the result as a rational number in its lowest term.

$$\frac{2}{5} - \frac{1}{4} + (8.1 \times 2.7) \div 0.09$$

8. Simplify $-4/8 + 7/13 + 9$

9. Verify $3/5 \times (-1/7 - 5/14) = (3/5 \times -1/7) - (3/5 \times 5/14)$

10. Divide the sum of $\frac{5}{21}$ and $\frac{4}{7}$ by their difference.

11. For $x = \frac{3}{4}$ and $y = \frac{-9}{8}$, insert a rational number between

$$(x - y)^{-1} \text{ and } x^{-1} - y^{-1}$$

12) Find the value of $x - y$ and $y - x$ for $x = \frac{2}{3}$ and $y = \frac{5}{9}$. Are they same?

13) Simplify and express the result in standard form.

$$-4 \times \left(\frac{7}{3} - \frac{5}{6} \right)$$

SECTION—D (6- marks)

1. Simplify & Express the result in a lowest form.

$$\frac{2}{5} \times \frac{3}{4} + \frac{1}{25} \times \frac{1}{2} - \frac{2}{10} \times \frac{1}{5}$$

2.(a) The product of two numbers is $-\frac{25}{16}$, One number is $-\frac{5}{4}$, Find the other number.

(b) Convert $\frac{1}{3}$ into decimal form.

3. Verify the property $x \times (y + z) = x \times y + x \times z$ by taking

$$x = \frac{1}{3}, y = \frac{1}{5}, z = \frac{1}{7}$$

4. Divide the sum of $5/21$ and $4/7$ by their difference.

5. By taking $x = \frac{-2}{3}$, $y = \frac{5}{9}$, $z = \frac{-1}{6}$, verify that $(x + y) \div z = (x \div z) + (y \div z)$

6. Find the reciprocal of $-2/5 \times 5/7 + 2/9 \div 1/3 \times 6/7$.

7. By taking $X = \frac{-3}{5}$, $Y = \frac{7}{10}$, $Z = \frac{-7}{4}$

Prove that $X \times (Y + Z) = X \times Y + X \times Z$

UNIT—3

SECTION---A (1-mark each)

1. $6.4/0.2 = \underline{\hspace{2cm}}$

(a) 3.2 (b) 0.32 (c) 32 (d) 2.3

2) $\frac{7}{800}$ has _____ decimal representation

- 3) The decimal representation of $\frac{1}{3}$ is
 a) 0.3 b) 0.3 c) 3.33 d) none of these

4. Which is the decimal form of $\frac{7}{20}$
 a) 0.035 b) 0.35 c) 35 d) 3.5

5. Divide $62.5 \div 0.5$
 a) 125 b) 1.25 c) 12.5 d) 0.125

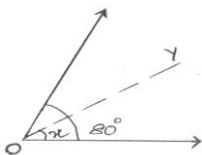
6. Which of the following will not have a terminating decimal representation?
 (a) $\frac{11}{8}$ (b) $\frac{19}{25}$ (c) $\frac{7}{10}$ (d) $\frac{22}{14}$

7. Decimal numbers having a finite number of decimal places are known as
 (a) Terminating decimal numbers. (b) Non-terminating decimal numbers.
 (c) Non terminating repeating decimal numbers. d) None of these

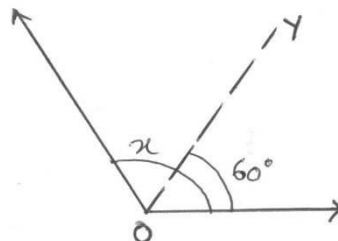
SECTION—B (2-marks)

1. Simplify $5 \times 0.16 - 0.52 + 8.263$.
2. Without actual division, determine whether the rational number $\frac{29}{250}$ has either terminating or non terminating.
3. Evaluate, $42.7 - 11 - 9.025 + 2.16$
4. Add : 3.009, 2.59, 16.745 and 0.12
5. Divide : $32.768 \div 8$
6. Convert $\frac{129}{25}$ as decimal.
7. Simplify: $3.125 \div 0.125 + 0.50$
8. Convert $\frac{9}{16}$ as a decimal.
9. Will the decimal representation $\frac{31}{15}$ be terminating or non – terminating . Give reason .
10. Write two English alphabets having (i) 1 line of symmetry (ii) no line of symmetry

11. i.



ii



If lines OY represent the line of symmetry of the angles, find X.

12. Find the product 0.111×0.005

13. Express -2.56 in the form of $\frac{p}{q}$

SECTION—C (4-marks each)

1. Simplify the following expression

$$42.7 - 11 - 9.025 + 2.16$$

2. Simplify: $-\frac{0.144 \div 1.2}{0.016 \div 0.02} + \frac{7}{5} - \frac{21}{8}$

3. $44 \times (144 \div 12) - 0.225 + 3.276$

4. Simplify the following expression.

$$(75.05 \div 0.05) \times 0.001 + 2.351$$

5. Evaluate $(16.9 + 3.2) - (12.03 - 7.8)$

6. Simplify and express the result as a rational number in its lowest forms.

$$0.6 \times 0.005 \times 0.02$$

----- $-1/4 + 1/2$

$$0.1 \times 0.01 \times 100$$

7. Simplify the following expression: $-2.5 + 8.639 - 2.89 + 8.49$

8. Simplify and express the result in standard form :-

$$\left(\frac{3}{8} - \frac{7}{40}\right) \div \frac{2}{40}$$

9. Simplify and express the result as a rational number in its lowest form : $\frac{1}{4} + 1.25 \div 0.05 - \frac{1}{5}$

10. Simplify: $\frac{1}{2} + \frac{1}{5} + 6.25 \div 0.25$

11. Rama planted $\frac{1}{2}$ of his field by mango trees, $\frac{1}{4}$ of his field by guava trees, $\frac{1}{8}$

of his field banana plants and the rest by rose plants. What part of the field is planted with rose plants? Express it as a decimal number also.

What value do you depict from this? (any two points)

SECTION—D (6-marks each)

1. Convert $\frac{1}{3}$ into decimal form.

2. Simplify and express in it's lowest form $\frac{0.144 \div 1.2}{0.016 \div 0.02} - \frac{3}{8}$

3. Simplify and express the result as a rational in its lowest form .

$$\frac{0.4 \times 0.04 \times 0.005}{0.1 \times 10 \times 0.001}$$

4. Simplify:- $\frac{0.4 \times 0.004 \times 0.005}{0.1 \times 10 \times 0.001} - \frac{1}{2} + \frac{1}{5}$

5. Simplify and express the result as a rational number in its lowest terms

$$2/5 - 1/8 + (8.1 \times 2.7) \div 0.09$$

6. Simplify the following expressions.

a) $-5.7 + 13.20 - 15.009 + 0.02$

b) $\frac{2}{5} \times \frac{3}{4} + \frac{1}{25} \times \frac{1}{2} - \frac{2}{10} \times \frac{1}{5}$

7) Simplify $(156.25 \div 0.025) \times 0.02 - 5.2$

UNIT-6

SECTION--A (1- mark each)

1. Find the area of a rectangle whose sides are $2a$ and $3a$.

(a) $6a$ square unit (b) $5a^2$ squnit (c) $3a^2$ squnit (d) $6a^2$ squnit

2. $x(y - z) + y(z - x) + z(x - y)$ is equal to

(a) xyz (b) 0 (c) $x + y + z$ (d) None

3) If a letter has no coefficient written before it, the coefficient_____ is understood.

a) 0 b) 1 c) -1 d) none of these

4. The H.C.F of $9x^3y$ & $18x^2y^3$ is

a) $3x^2y$ b) $9xy^2$ c) $9x^2y^2$ d) $9x^2y$

5. In $xyz - 1$ how many terms are there

a) 1 b) 4 c) 2 d) 3

6. With what number should we divide $\frac{-3}{7}$, so that the quotient be $\frac{21}{5}$.

7. If $m=2$, then value of $9-5m$ is

(a) 1 (b) 0 (c) -1 (d) 2

8. $x^2 - y^2$ is same as

- (a) $y^2 - x^2$ (b) $x^2 + y^2$ (c) $-(y^2 - x^2)$ (d) none of these

SECTION—B (2- marks each)

- Simplify $-6x^2(xy + 2y^2) - 3y^2(2x^2 + y)$.
- Factorise : $1 + x + xy + x^2y$
- Multiply : $(9a^2b) \times (-2/3ab^2) \times (-5bc^2)$
- Find the product of $(\frac{2}{5}a + \frac{1}{7}b)(3a + 4b - 2)$
- Factorise : $1 + x + xy + x^2y$
- Find the product : $(\frac{5}{4}x^2 - \frac{3}{2}xy)(x + y + y^2)$
- Find the area of a rectangle whose sides are $2p$ and r .
- The co-efficient of y^2 in $-35x^3y^2$
 - -35
 - $-35x^3$
 - $-35x^2y^2$
 - $-35x^3y$
- What should be subtracted from $4a^2 - 3b + c^2$ to get a^2b .
- Add $-4x + 3y - 5z$ and $-y - 3x + 2z$
- Find the area of a rectangle whose breadth is b and length is square of breadth.
 - Subtract $x^2 - x + 1$ from $2x^2 + x - 1$

SECTION—C (4- marks)

- Factorise: $axy + bcxy - az - bcz$
- Find the product & verify $m = -2, n = 0$;
 $(m^3 + n^3)(2m - 3n)$
- Simplify $(2x - 3y)(3x + y) + (x + 2y)(x - y)$
- $(x - y)^{-1} \neq x^{-1} - y^{-1}$
Here $x = -\frac{2}{7}, y = \frac{4}{7}$
- Simplify and verify the result for $x=1$ and $y=-2$
 $(x^3y - y^2)(x^3y + y^2)$
- Factorise : $4(p+q)(3a-b) - 6(p+q)(2b-3a)$
- Find HCF of the terms
 - $15a^3, -45a^2, 150a$
 - $x^4y - 3x^2y^2 - 6xy^3$
- Simplify $(a + 2b)(a - b) + (2a - b)(a + b)$
- Simplify and verify the result for the given values .
 $(2p + 3q)(4p^2 + 12pq + 9q^2)$; $p = \frac{1}{2}, q = \frac{1}{3}$
- Simplify $p^2(2pq + q^3) - 2q^2(p^2q + 5)$
- Find the HCF of the given term in the algebraic expression and factorize

$$7x^3y - 14x^2y + 28x^2y^3$$

12. Multiply and verify the results at $X=1$ and $Y=2$, $(x+y)(x^2-2y+y^2)$

13. Simplify the following: $(a^2+b^2)(a^2+b^2)-(a^2-b^2)(a^2-b^2)$

14. Express $1.5a^2(10ab-4b^2)$ as a binomial & then evaluate at $a=-2$, $b=3$

15. Factorize $a(a+b)+8a+8b$

SECTION—D (6- marks)

1. Simplify $3x^2(3y^2+2) - x(x-2xy^2) + y(2x^2y-2y)$

2. Factorise: (i) $a^2+bc+ac+ab$

(ii) $3a(p-2q) - b(p-2q)$

3. a. Factorise, $ab^2-bc^2-ab+c^2$

b. Simplify, $(y^2-7y+4)(3y^2-2+y)$

4. Simplify: $3p^2(3q^2+2) - p(p-2q^2) + q(2p^2q-2q)$ and verify the result for $p=1$ and $q=-1$

UNIT—9

SECTION—A (1- mark each)

1. If $\triangle ABC \cong \triangle EFD$ then $BC =$ _____.

(a) CD (b) FD (c) EF (d) ED.

2. If two sides and the included angle of one triangle are respectively equal to the sides and included angle of the other, then the two triangles are congruent by,

(a) RHS (b) SSS (c) SAS (d) ASA

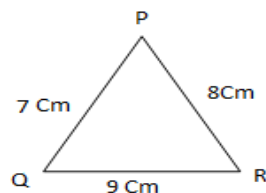
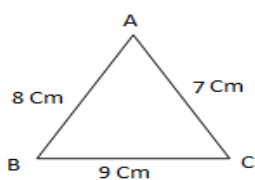
3. Two circles are congruent, if they have

(a) same shape (b) same radius (c) same angle (d) none of these

4. $\triangle ABC \cong \triangle XYZ$, if $AC = 8\text{cm}$ then which side of $\triangle XYZ$ equal to 8cm ?

(a) XY (b) YZ (c) XZ (d) None

5.



Two triangles are congruent by S S S then

(a) $\triangle ABC \cong \triangle PQR$ (b) $\triangle ABC \cong \triangle PRQ$

(c) $\triangle ABC \cong \triangle QRP$ (d) None of above

6. Two circles are said to be congruent if

a) they have same radius (b) they have same circumference

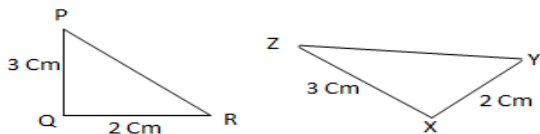
c) they have same center (d) none of these

7. The three sides of one triangle are respectively equal to three corresponding sides of other triangle, then this is which congruence condition?

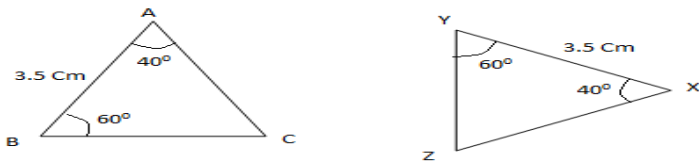
- a) SAS b) SSS c) ASA d) RHS
8. Two Rectangles are congruent if they have
 a) Same Perimeter b) Same length & Same breadth c) Same area d) none of these
9. If $\triangle ABC \cong \triangle QRP$, then $\angle ACB = \dots\dots\dots$
 a) $\angle PQR$ b) $\angle QPR$ c) $\angle PRQ$ d) None of the these
10. If the two angles and the included side of one triangle are respectively equal to the two angles and the included side of the other triangle are equal, then this is which congruence condition.
 a) ASA b) SSS c) RHS d) SAS
11. Two triangles are congruent if pairs of corresponding ----- and corresponding ----- are congruent.
 a) sides, angles b) sides, vertex c) angles, names d) sides and names
12. Two triangles are congruent if they have
 a) same corresponding angles b) same corresponding sides c) both a and b d) none
13. Write which is not the case for triangle congruence
 a) SSS b) AAA c) SAS d) ASA
14. Two figures are congruent if they have
 (a) same shape (b) same size (c) same shape & size (d) none of these
- 15) Between $\triangle ABC$ and $\triangle DEF$, $\angle A = \angle E$, $AB = EF$, and $AC = DE$ then which one of the following is correct
 (a) $\triangle ABC \cong \triangle DEF$ (b) $\triangle ABC \cong \triangle EFD$
 (c) $\triangle ABC \cong \triangle FDE$ (d) $\triangle ABC \cong \triangle EDF$

SECTION—B (2- marks each)

1. In $\triangle ABC$ $AB = AC$, AD is the bisector of $\angle A$ & meets BC at D . Show that $\triangle ABD \cong \triangle ADC$.
2. If $\triangle ABC \cong \triangle DEF$, fill in the blanks to make the statement true
 (i) $EF = \underline{\hspace{2cm}}$ (ii) $\angle C = \underline{\hspace{2cm}}$.
3. Are the following two triangles are congruent? if yes write their congruency in symbolic form.

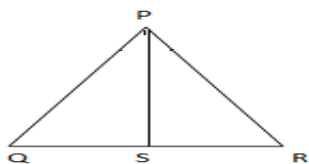


4. Given that $\triangle ABC$ is congruent with $\triangle RPQ$, $\angle A = 50^\circ$, $\angle B = 60^\circ$ find $\angle P$, $\angle Q$, $\angle R$
- 5.



Write the congruence condition of the two triangles.

6. If In triangle PQR, $PQ = PR$, PS is altitude from P on QR , what is $\frac{QS}{SR} = \underline{\hspace{2cm}}$



7. If $\triangle ABC \cong \triangle DEF$, fill in the blanks to make each statement true.

(i) $AB = \underline{\hspace{2cm}}$ (iii) $\angle C = \underline{\hspace{2cm}}$

(ii) $CA = \underline{\hspace{2cm}}$ (iv) $\angle D = \underline{\hspace{2cm}}$

8) If $\triangle PQR \cong \triangle XYZ$, then write the corresponding equal angles.

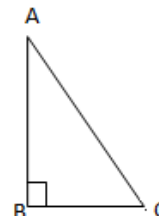
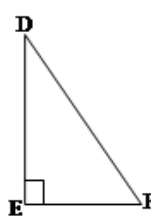
9) In triangle ABC, $AB = AC$ and D is midpoint of BC prove that $\triangle ADB \cong \triangle ADC$.

10) ABC and DEF are two right triangles with

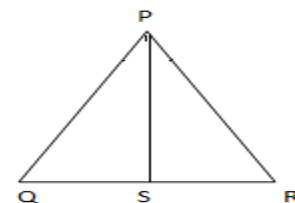
$\angle B = \angle E = 90^\circ$. $AC = DF$ and $\angle A = \angle D$

(i) are they congruent?

(ii) If yes then write the congruence condition.



SECTION—C (4- marks each)



1. In the figure, PS bisects $\angle P$ and $PS \perp QR$,

(i) Is $\triangle PSQ \cong \triangle PSR$?

(ii) State the three pairs of matching parts you have used in (i).

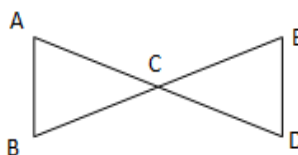
(iii) Is it true to say that $QS=SR$? Why?

2. In the adjoining figure :

If $AC = DC$, $\angle A = \angle D$

Then prove that $\triangle ABC \cong \triangle DCE$ (give reason)

Is $\angle B = \angle E$?



3. If $\triangle PQR$ is an isosceles triangle such that $PQ = PR$, then prove that the Altitude PS from P on QR bisect QR.

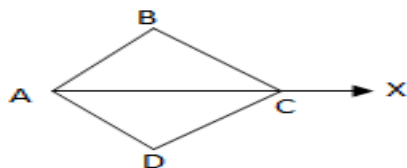
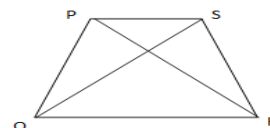
4. In this figure PQR and SQR are two triangles on a common base QR Such that $PQ = SR$ and $PR = SQ$.

i) Is $\triangle PSQ \cong \triangle SPR$? By which congruence condition.

ii) State the three pairs of corresponding parts you have used in (i)

ii) If $\angle SRP = 40^\circ$ and $\angle QPS = 110^\circ$, then find $\angle PSQ$.

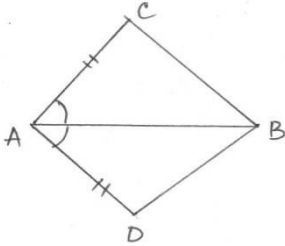
5.



AX bisects $\angle BAD$ and $\angle BCD$

State the three facts needed to ensure that $\triangle ABC \cong \triangle ADC$. Give reason for each statement

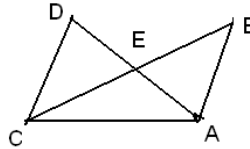
6.



In the figure AB bisects $\angle CAD$ and $AC = AD$. Prove that (i) $\triangle ABC \cong \triangle ABD$ and (ii) $BC = BD$

7. In the given figure $AB = CD$, $AD = BC$

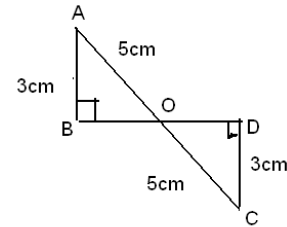
prove that $\triangle ADC \cong \triangle CBA$



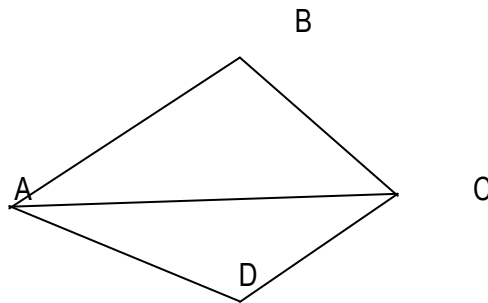
8. In the given figure

i) Is $\triangle ABO \cong \triangle CDO$? Write the congruence condition

ii) Write the matching parts?



9.



In the given fig.

$AB = AD$ and $\angle BAC = \angle DAC$

i) State the congruence of two triangles in symbolic form.

ii) State the congruence condition used.

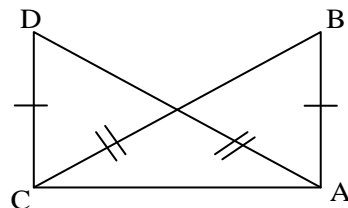
iii) $\angle ABC =$ _____

iv) Line segment AC bisects _____ and _____

10) In the figure it is given that

$AB = CD$ and $AD = BC$

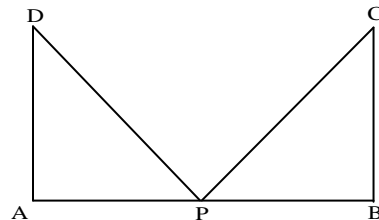
prove that $\triangle ADC \cong \triangle CBA$



11) In the figure $AD \perp AB$ and $BC \perp AB$.

P is midpoint of AB . If $AD = BC$.

Prove that $\triangle ADP \cong \triangle BCP$



SECTION - D (6- marks each)

1. Show that in an isosceles triangle, angles opposite to equal sides are equal.

2. Show that the bisector of the vertical angle of an isosceles triangle bisects the base at right angles.

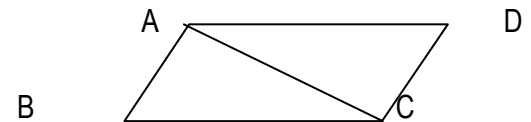
3. In the adjoining figure

$AB \parallel DC$ and $AB = DC$

$\angle BAC = \angle DCA$

(ii) Is $\triangle ABC \cong \triangle CDA$ SAS congruence condition .

(iii) State the three facts used to answer (ii)



Two students are used to make poster of above figure. One writes CLEAN INDIA and other writes SAVE TREES SAVE NATURE. Which type of information depicted by the students.

4. show that the bisector of the vertical angle of an isosceles triangle bisects the base at right angle.

5. AD, BE and CF, the altitudes of $\triangle ABC$ are equal .

Prove that $\triangle ABC$ is an equilateral triangle

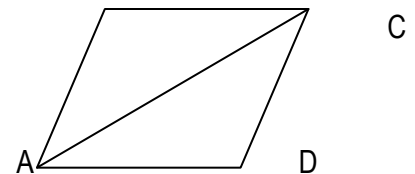
6. In this figure , $AB \parallel DC$ and $AB = DC$.

i) Is $\triangle ACD \cong \triangle CAB$?

ii) State the three pairs of corresponding parts you have used in (i)

iii) Which angle is equal to $\angle CAD$.

iv) Is $AD \parallel BC$. Give reason.



7. P and Q are two points on equal sides AB and AC of an isosceles triangle ABC such that $AP = AQ$. Prove that $BQ = CP$.

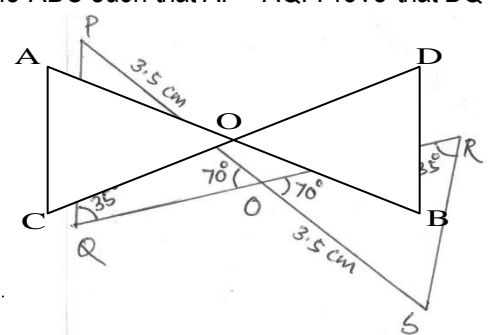
8. In the figure $AO = BO$ and $\angle A = \angle B$

(i) Is $\angle AOC = \angle BOD$? Why?

(ii) $\triangle AOC \cong \triangle BOD$, by which congruence condition .

(iii) State the three facts you have used to answer it .

(iv) Is $\angle ACO = \angle BDO$? Why ?



9. In the given figure $\angle PQO = \angle SRO = 35^\circ$, $\angle POQ = \angle ROS = 70^\circ$,

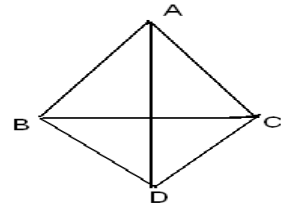
$PO = SO$

- (i) Is $\triangle PQO \cong \triangle SRO$ by ASA Congruence condition
- (ii) Find 3 pairs of corresponding parts to support your answer .

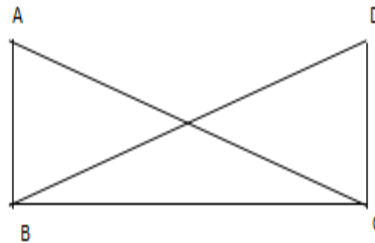
10. Show that the bisector of the vertical angle of an isosceles triangle bisects the base at right angles.

11: Show that the bisectors of the vertical angles of an isosceles triangle bisect the base at right angles

12. ABC is an isosceles triangle in which $AB=AC$, also D is a point such that $BD=CD$. Prove that AD bisects $\angle A$ and $\angle D$.



O13. In the given fig. $AC=DB$ and $AB \perp BC$. Also $DC \perp BC$.



(a) State which of the following statement is true.

- (i) $\triangle ABC \cong \triangle DBC$
- (ii) $\triangle ABC \cong \triangle DCB$
- (iii) $\triangle ABC \cong \triangle BCD$

b) State the three pairs of matching parts you have used to arrive at the answer

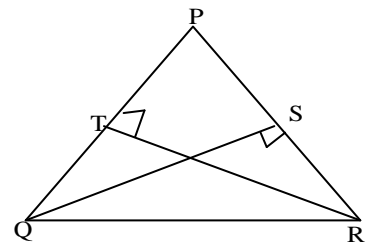
c) Which side is equal to side AB ? Why ?

14) QS and RT are the altitudes of triangle PQR and $QS = RT$

i) Is $\triangle QRS \cong \triangle RQT$ by RHS congruency condition

ii) State the three pairs of corresponding parts which

make $\triangle QRS \cong \triangle RQT$



UNIT—13

SECTION—A (1- Mark each)

1. The number of lines of symmetry of an equilateral triangle is :-

- (a) 2 (b) 1 (c) 3 (d) 4

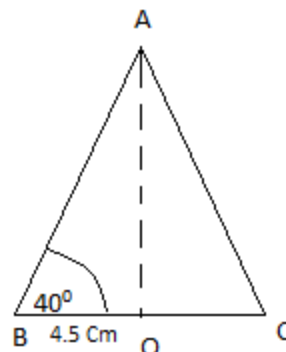
2. How many lines of symmetry does a circle have?

- (a) one (b) zero (c) infinite (d) ten

3. English alphabet **H** has _____ lines of symmetry.
 (a) 1 (b) 2 (c) 3 (d) 4
4. How many line of symmetry will a regular pentagon have ?
 (a) 4 (b) 7 (c) 3 (d) 5
5. Line of symmetry of a line segment is its
 (a) angle bisector (b) perpendicular bisector (c) mid point (d) None
- 6) The letter X of English alphabet has
 a) one line of symmetry b) two lines of symmetry c) no line of symmetry d) none of these
7. A regular pentagon has lines of symmetry .
 a) 4 b) 5 c) 6 d) 8
8. How many lines of symmetry will a rhombus have ?
 a) 4 b) 2 c) 0 d) 1
9. A regular hexagon has _____ lines of symmetry
 (i) four (ii) five (iii) six (iv) seven
10. An equilateral triangle has _____ lines of symmetry
 a) 3 b) 1 c) 2 d) none
11. A circle has
 (a) No line of symmetry (c) One line of symmetry
 (b) Two lines of symmetry (d) Unlimited lines of symmetry
12. For any type of triangle _____ number of line of symmetry is not possible
 a) 3 b) 2 c) 0 d) 1
13. For any type of quadrilateral _____ number of line of symmetry is not possible
 a) 3 b) 2 c) 0 d) 1

SECTION—B (2- Marks each)

1. Write 2 English alphabets each having (a) one line of symmetry (b) Two line of symmetry
2. How many lines of symmetry will a kite have? Draw the lines of symmetry of kite.
3. Draw the lines of symmetry of a square . How many line of symmetry of a square
4. The dotted line represent the line of symmetry of $\triangle ABC$



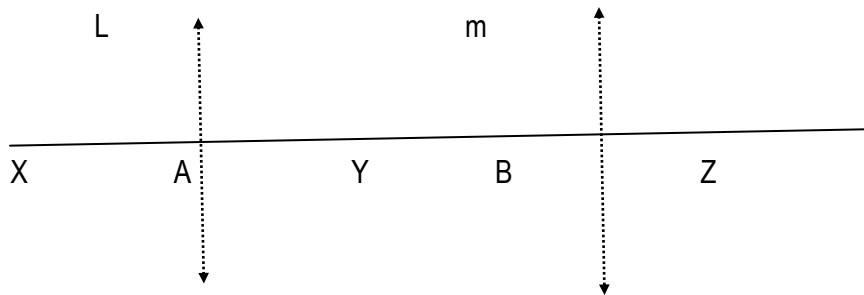
if $\angle ABC = 40^\circ$ and $OB = 4.5\text{cm}$. Find a) $\angle ACO$ b) measure of OC

5. Under what circumstances will a right angle triangle have a line of symmetry? Give reason.
6. Write two English alphabets each having the following number of lines of symmetry.
 a) one line of symmetry
 b) two lines of symmetry

7. State the line of symmetry for the following figures .

- a) circle b) kite

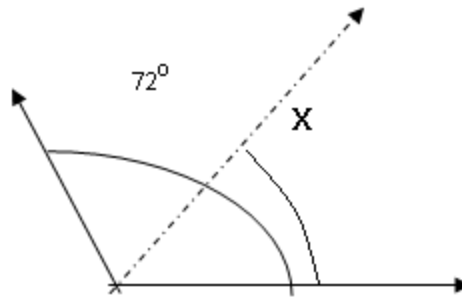
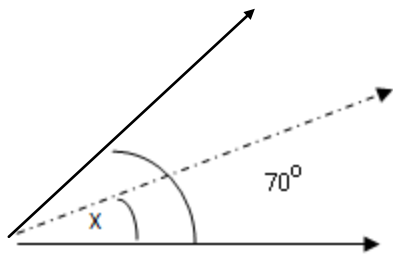
8. Lines 'l' and 'm' are the lines of symmetry of the line segments XY and YZ respectively. If $XA = 3\text{ cm}$ & $YZ = 8\text{ cm}$. Find AB and XZ .



9. How many lines of symmetry will an isosceles trapezium have . Draw these lines .

10. Construct an equilateral triangle PQR , Find all lines of symmetry?

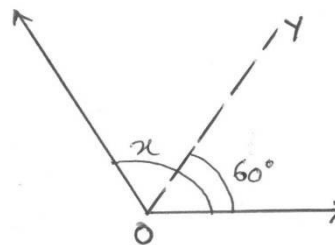
11. If dotted lines represent the lines of symmetry of the given angles , find x in



12. Write two English alphabet having

- (i) 1 line of symmetry
(ii) no line of symmetry

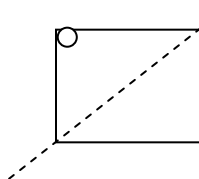
13. Draw 150° and find its line of symmetry.



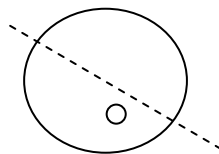
14. Write two English alphabets each having two lines of symmetry.

15. In the following figures, the lines of symmetry are shown by dotted lines. Find the other appropriate holes.

(a)



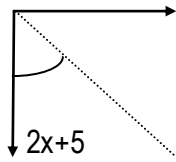
(b)



SECTION—C (4- Marks each)

1. Draw any 2 English alphabets having one line of symmetry and show their lines of symmetry.

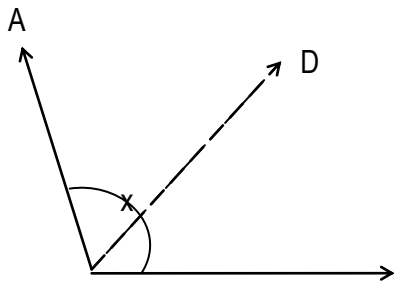
2. If the dotted lines represent the lines of symmetry of the given angles(90°), find the value of x



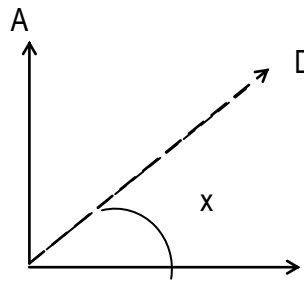
3. Draw the line of symmetry of the following figures. Also find out the number of line of symmetry for each figure .

1.(a) circle (b) isosceles trapezium

4. If the dotted lines of symmetry of the given angles, find the value of X .

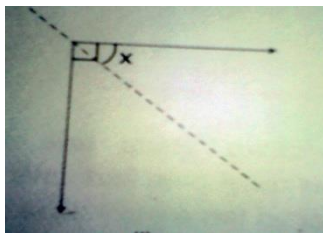


B $\angle DBC = 75^\circ$ C



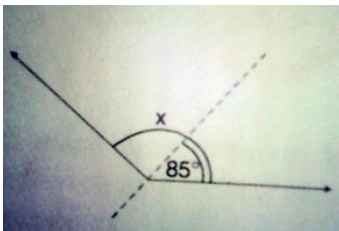
B $\angle ABC = 90^\circ$ C

5. If the dotted lines represent the lines of symmetry of the given angles, find the value of x i)



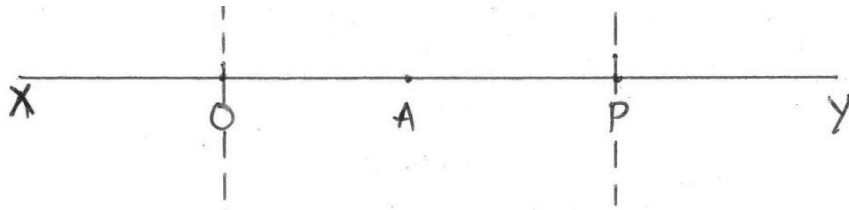
$\angle ABC = 90^\circ$

ii)



$\angle DBC = 85^\circ$

6.

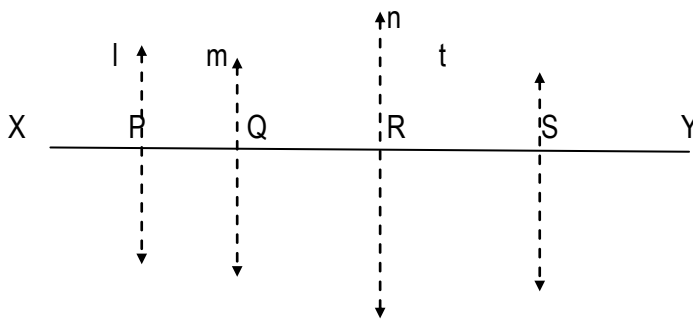


If line l and m are line of symmetry of AX and AY respectively and $OX = 3\text{cm}$ $PY = 4\text{cm}$

Find (i) OA (ii) PA (iii) OP (iv) XY

7. L, m, n, t are the lines of symmetry of line segments XQ, PR, XY and RY respectively. If XP = 1.5 cm find the length of the line segments.

(a) PQ (b) QR (c) RY (d) PR



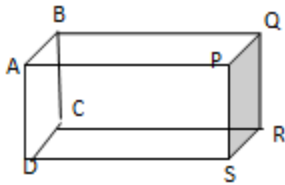
UNIT—14

SECTION – A (1 mark each)

1. A triangular pyramid has _____ number of edges.
(a) 4 (b) 6 (c) 8 (d) 2
2. Which of the following solid has 8 edge?
(a) cube (b) cuboids (c) square pyramid (d) prism
3. Number of edges of a square base pyramid is _____ .
(a) 8 (b) 7 (c) 6 (d) 5
- 4) The net for a cylinder without top and bottom is
a) triangle b) circle c) rectangle d) none of these
5. A sphere has dimensions.
a) one b) Two c) Three d) None of these
6. All the faces of a cuboid are
a) Triangle b) Rectangle c) Square d) Pentagon
7. A Solid has 7 faces & 15 edges. Find the number of vertices.
a) 12 b) 10 c) 14 d) 13
8. How many dimensions of a solid has
a) 2 b) 4 c) 3 d) none of these
- 9..All the side faces of a pyramid are
a)triangular b)square c) rectangle d)pentagonal
10. The other name of a tetrahedron is
(a) Triangular pyramid (c) Rectangular pyramid
(b) Square pyramid (d) None of these
- 11) A sphere has how many edges
(a) 0 (b) 1 (c) 2 (d) 3

SECTION – B (2- marks each)

1. Draw the net of a cube.
2. Write the numbers of vertices, edges, and faces of a tetrahedron.
3. Name all the edges and faces of cuboids.



4. How many vertices, edges and faces will a cube have ? what is the shape of Each face ?
5. Define a tetrahedron . also draw the figure of a tetrahedron
6. How many faces and edges do the following shapes have .
a) cone b) Cube
7. Draw the net to get a triangular prism.
8. Draw the net to get a rectangular pyramid.

9. How many faces and edges does the following shapes have :

(i) cuboid (ii) cylinder

10. How many faces and edges do the following shapes have ?

a) cube b) cylinder

11. Draw two different net to get a cube.

12. What do you mean by a triangular pyramid ?

13. Draw a tetrahedron solid show its four faces as triangles. Name its four vertices also.

SECTION – C (4 - marks each)

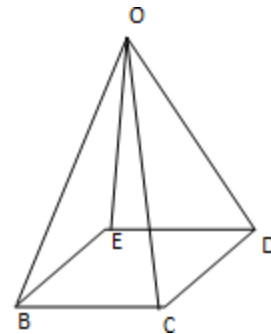
1. Draw a square pyramid (ABCDE) of any measurement. Find out how many faces does it have?
2. Draw a net of square pyramid and cube.

3. Draw a cube surmounted by a pyramid .Find number faces, edges and vertices .
4. sketch a cuboid of size $3 \times 3 \times 2$ in a squared paper.
5. Draw an isometric sketch for a cuboid of dimensions $4 \times 3 \times 2$
6. Draw nets for a square pyramids.

7. How many faces and edges do the following shapes have?

- a- Cuboid
- b- Sphere

8.

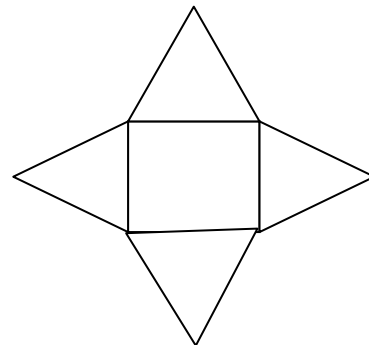


The base of the given pyramid is a square BCDE

- i) How many more faces does it have ?
- ii) What is the shape of other faces ?
- iii) Name all the vertices and edges of the given pyramid

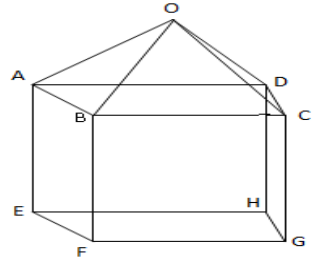
9. Fold the net to get a solid.

- a) What is the solid known as ?
- b) Draw a cube and show its 8 vertices.

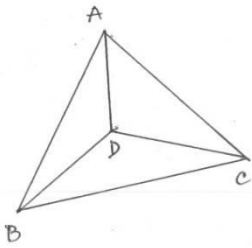


SECTION – D (6- marks each)

1. This figure shows a cube surmounted by a pyramid.
- i) How many faces, edges and vertices does it have ?
 - ii) Name its edges , faces and vertices.
 - iii) Write the number of triangular faces and square faces.



2. (i)What is the given figure called ?



- (ii) How many edges, vertices and faces does it have?
- (iii)Name its faces edges and vertices.
- (iv) The faces are of which shape?
