



ST. MARY'S CO-ED SCHOOL, HARDA

CLASS - VI

(2020-2021)

SUBJECT – MATHS

CHAPTER – 13

ANGLES AND THEIR MEASUREMENT

EXERCISE – 13 B

Question 1:

State the type of each of the following angles:

ANSWER:

- (i) $\angle AOB$ is an obtuse angle since its measure is more than 90° .
- (ii) $\angle COD$ is a right angle since its measure is 90° .
- (iii) $\angle FOE$ is a straight angle since its measure is 180° .
- (iv) $\angle POQ$ is a reflex angle since its measure is more than 180° but less than 360° .
- (v) $\angle HOG$ is an acute angle since its measure is more than 0 but less than 90° .
- (vi) $\angle POP$ is a complete angle since its measure is 360° .

Question 2:

Classify the angles whose magnitudes are given below:

- (i) 30°
- (ii) 91°
- (iii) 179°
- (iv) 90°
- (v) 181°
- (vi) 360°
- (vii) 128°
- (viii) $(90.5)^\circ$
- (ix) $(38.3)^\circ$
- (x) 80°
- (xi) 0°
- (xii) 15°

ANSWER:

(i) Acute angle

This is because its measure is less than 90° but more than 0° .

(ii) Obtuse angle

This is because its measure is more than 90° but less than 180° .

(iii) Obtuse angle

This is because its measure is more than 90° but less than 180° .

(iv) Right angle

This is because its measure is 90° .

(v) Reflex angle

This is because its measure is more than 180° but less than 360° .

(vi) Complete angle

This is because its measure is 360° .

(vii) Obtuse angle

This is because its measure is more than 90° but less than 180° .

(viii) Obtuse angle

This is because its measure is more than 90° but less than 180° .

(ix) Acute angle

This is because its measure is more than 0° but less than 90° .

(x) Acute angle

This is because its measure is more than 0° but less than 90° .

(xi) Zero angle

This is because its measure is zero.

(xii) Acute angle

This is because its measure is more than 0° but less than 90° .

Question 3:

How many degrees are there in

(i) one right angle?

(ii) two right angles?

(iii) three right angles?

(iv) four right angles?

(v) 2323 right angle?

(vi) 112112 right angles?

ANSWER:

(i) One right angle has 90° .

(ii) Two right angles have $90^\circ + 90^\circ = 180^\circ$.

(iii) Three right angles have $90^\circ + 90^\circ + 90^\circ = 270^\circ$.

(iv) Four right angles have $90^\circ + 90^\circ + 90^\circ + 90^\circ = 360^\circ$.

(v) $23 \times 90 = 2070$

(vi) $(1+12) \text{ right angles} = 13 \times 90 = 1170$

Question 4:

How many degrees are there in the angle between the hour hand and the minute hand of a clock, when it is

- (i) 3 o'clock?
- (ii) 6 o'clock?
- (iii) 12 o'clock?
- (iv) 9 o'clock?

ANSWER:

- (i) At 3 o'clock the angle formed between the hour hand and the minute hand is right angle, i.e. 90° .
- (ii) At 6 o'clock the angle formed between the hour hand and the minute hand is a straight angle, i.e. 180° .
- (iii) At 12 o'clock the angle formed between the hour hand and the minute hand is a complete angle, i.e. 0° .

This is because the hour hand and minute hand coincides to each other at 12 o'clock.

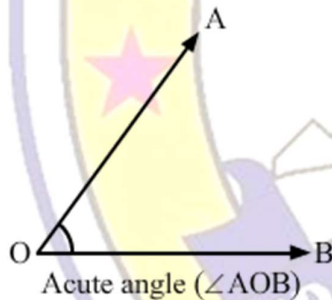
- (iv) At 9 o'clock the angle formed between the hour hand and the minute hand is a right angle, i.e. 90° .

Question 5:

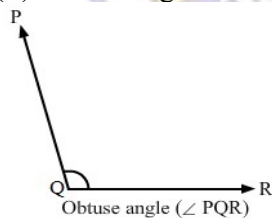
Using only a ruler, draw an acute angle, an obtuse angle and a straight angle.

ANSWER:

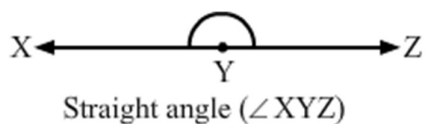
- (i) Acute angle



- (ii) Obtuse angle



(iii) Straight angle



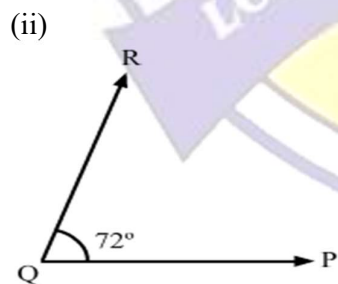
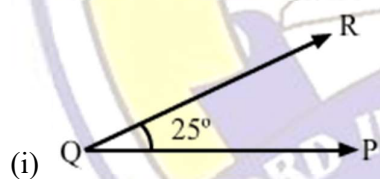
EXERCISE 13 C

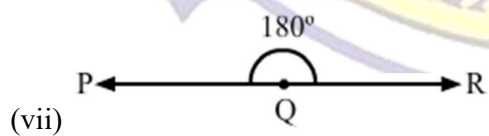
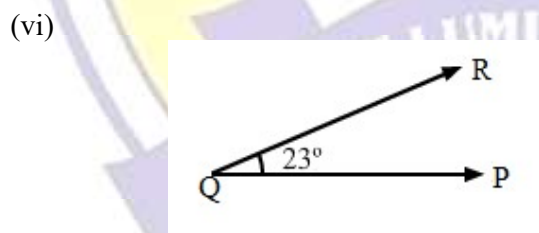
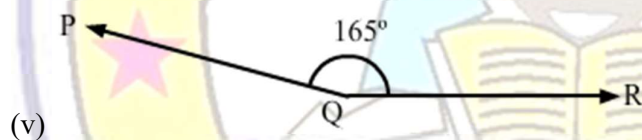
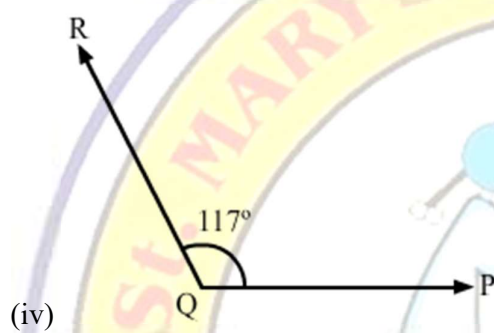
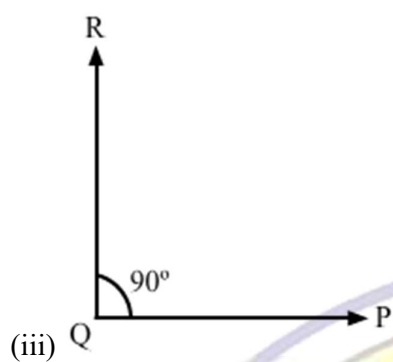
Q.2 Construct each of the following angles with the help of a protractor:

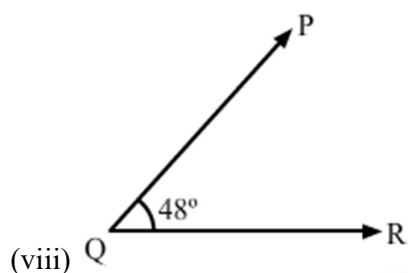
- (i) 25°
- (ii) 72°
- (iii) 90°
- (iv) 117°
- (v) 165°
- (vi) 23°
- (vii) 180°
- (viii) 48°

ANSWER : (1) Steps to follow:

1. Draw a ray QP with Q as the initial point.
2. Place the protractor on QP. With its centre on Q, mark a point R against the given angle mark of the protractor.
3. Join RQ. Now, PQR is the required angle.
4. Join RQ. Now, PQR is the required angle.







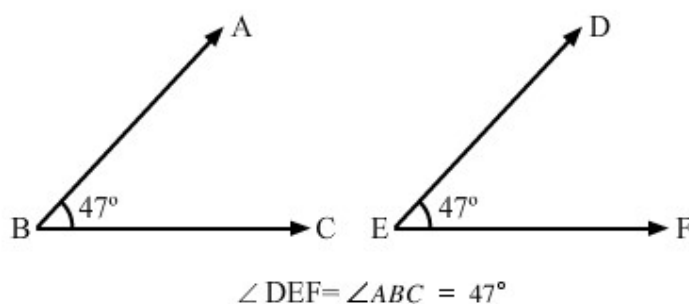
Q.3 Measure $\angle ABC$ given in the adjoining figure and construct an angle DEF equal to $\angle ABC$.

ANSWER:

We can see that $\angle ABC = 47^\circ$.

Steps to follow to construct angle $\angle DEF$ equal to $\angle ABC$:

- Draw a ray EF with E as the initial point.
- Place the protractor on EF . With its centre at E , mark a point D against the angle 47° of the protractor.
- Join DE . $\angle DEF = 47^\circ = \angle ABC$ is the required angle.



Question 4:

Draw a line segment $AB = 6$ cm. Take a point C on AB such that $AC = 4$ cm. From C , draw $CD \perp AB$.

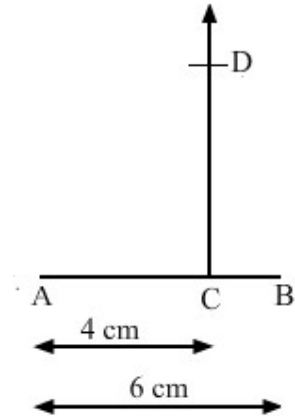
ANSWER:

1. Draw a line segment AB of length 6 cm.
2. Mark point C on AB such that AC is equal to 4 cm.
3. Place the protractor on AB such that the centre of the protractor is on C and its base lies along AB .

4. Holding the protractor, mark a point D on the paper against the 90° mark of the protractor.

5. Remove the protractor and draw a ray CD with C as the initial point.

Now, $CD \perp AB$



EXERCISE 13 D

Question 1:

Where does the vertex of an angle lie?

- (a) In its interior
- (b) In its exterior
- (c) On the angle
- (d) None of these

ANSWER:

- (c) On the angle

Vertex is the initial point of two rays between which the angle is formed. Therefore, it lies on the angle.

Question 2:

The figure formed by two rays with the same initial point is called

- (a) a ray
- (b) a line
- (c) an angle
- (d) none of these

ANSWER:

(c) an angle

The initial point is called the vertex.

Question 3:

An angle measuring 180° is called

- (a) a complete angle
- (b) a reflex angle
- (c) a straight angle
- (d) none of these

ANSWER:

(c) straight angle

Question 4:

An angle measuring 90° is called

- (a) a straight angle
- (b) a right angle
- (c) a complete angle
- (d) a reflex angle

ANSWER:

(b) right angle

Question 5: An angle measuring 91° is

- (a) an acute angle
- (b) an obtuse angle
- (c) a reflex angle
- (d) none of these

ANSWER:

(b) an obtuse angle

This is because it is more than 90° but less than 180°

Question 6: An angle measuring 270° is

- (a) an obtuse angle
- (b) an acute angle
- (c) a straight angle
- (d) a reflex angle

ANSWER:

(d) a reflex angle

This is because it is more than 180° but less than 360°

Question 7: The measure of a straight angle is

- (a) 90°
- (b) 150°
- (c) 180°
- (d) 360°

ANSWER:

(c) 180°

Question 8:

An angle measuring 200° is

- (a) an obtuse angle
- (b) an acute angle
- (c) a reflex angle
- (d) none of these

ANSWER:

(c) a reflex angle

This is because it is more than 180° but less than 360°

Question 9: An angle measuring 360° is

- (a) a reflex angle
- (b) an obtuse angle
- (c) a straight angle
- (d) a complete angle

ANSWER:

(d) a complete angle

This is because it completes the rotation of 360°

Question 10:

A reflex angle measures

- (a) more than 180° but less than 270°
- (b) more than 180° but less than 360°
- (c) more than 90° but less than 180°
- (d) none of these

ANSWER:

(b) more than 180° but less than 360° but less than 360°

Question 11: 2 right angles = ?

- (a) 90°
- (b) 180°
- (c) 270°
- (d) 360°

ANSWER:

(b)

2 right angles = $2 \times 90^\circ = 180^\circ$ (straight angle)

Question 12: 32 right angles = ?

- (a) 115°
- (b) 135°
- (c) 270°
- (d) 230°

ANSWER:

(b) 135°

32 right angle = $32 \times 90^\circ = 135^\circ$

Question 13: If there are 36 spokes in a bicycle wheel, then the angle between a pair of adjacent spokes is

- (a) 15°
- (b) 12°
- (c) 10°
- (d) 18°

ANSWER:

(c) 10°

Number of spokes = 36

Measure of the angle of the wheel = Complete angle = 360°

Angle between a pair of adjacent

spokes = Measure of angle / Number of spokes = $360^\circ / 36 = 10^\circ$