RS Aggrawal Solutions for Class 6 Maths Chapter 13 Angles And Their Measurement

ANSWER:

Three examples from our daily life are as follows:

1) Angle formed at the vertex of our elbow with the upper arm and the lower arm as the two rays. This angle will vary as per the position of our arm.

2) Angle formed between the two hands of the clock that are hinged at a point.

3) Angle formed between the two hands of a windmill. They are also hinged at a point, which is called the vertex of that angle.

Page No 176:

ANSWER:

The vertex is B.

Arms of $\angle ABC$ are rays $BA\overrightarrow{\ }$ and $BC\overrightarrow{\ }$∠ABC are rays BA→ and BC→.

Page No 176:

ANSWER:

(i) Here, three angles are formed. They
are $\angle ABC$, $\angle ACB$ and $\angle BAC$.∠ABC, ∠ACB and ∠BAC.
(ii) Here, four angles are formed. They
are $\angle ABC$, $\angle BCD$, $\angle CDA$ and $\angle DAB$∠ABC, ∠BCD, ∠CDA and ∠DAB.
(iii) Here, eight angles are formed. They
are $\angle ABC$, $\angle BCD$,$\angle CDA$,$\angle DAB$, $\angle ABD$, $\angle ADB$, $\angle CDB$, $\angle CBD$∠ABC, ∠BCD,∠CDA, ∠DAB, ∠ABD, ∠ADB, ∠CDB, ∠CBD.

Page No 176:

ANSWER:

Akash Institute

(i) Q and S are in the interior of $\angle\angle AOB$.

(ii) P and R are in the exterior of $\angle\angle AOB$.

(iii) A, O, B, N and T lie on the angle $\angle\angle$AOB.

Page No 176:

ANSWER:

(i)False
Point *C* is on the angle $\angle\angle AOC$.

(ii)True
Point *C lies* in the interior of $\angle\angle AOD$.

(iii) False
Point *D* lies in the exterior of $\angle\angle AOC$.

(iv) True
Point *B* lies in the exterior of $\angle\angle AOD$.

(v) False
Point C lies in the interior of $\angle\angle$AOB.

Page No 177:

ANSWER:

(i) $\angle\angle$EPB
(ii) $\angle\angle$PQC
(iii) $\angle\angle$FQD

Page No 179:

ANSWER:

Aakash Institute

(i) ∠∠AOB is an obtuse angle since its measure is more than 90°°.

(ii) ∠∠COD is a right angle since its measure is 90°°.

(iii) ∠∠FOE is a straight angle since its measure is 180°°.

(iv) ∠∠POQ is a reflex angle since its measure is more than 180°° but less than 360°°.

(v) ∠∠HOG is an acute angle since its measure is more than 0 but less than 90°°.

(vi) ∠∠POP is a complete angle since its measure is 360°°.

Page No 179:

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°°.

Page No 179:

Akash Institute

ANSWER:

(i) One right angle has 90°°.
(ii) Two right angles have 90°° + 90°° = 180°°.
(iii) Three right angles have 90°° + 90°° + 90°° = 270°°.
(iv) Four right angles have 90°° + 90°° + 90°° + 90°° = 360°°.
(v) $\frac{2}{3} \times 90 = 60°$23×90=60°
(vi) $(1+\frac{1}{2})$right angles $= \frac{3}{2} \times 90 = 135°$1+12right angles =32×90=135°

Page No 179:

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°°.

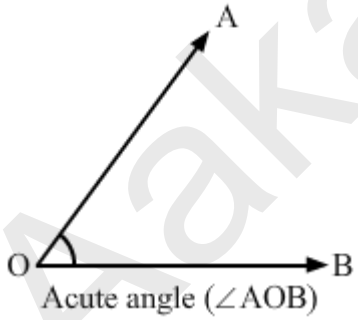
This is because the hour hand and minute hand coincides to each other at 12 o'clock.

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

Page No 179:

ANSWER:

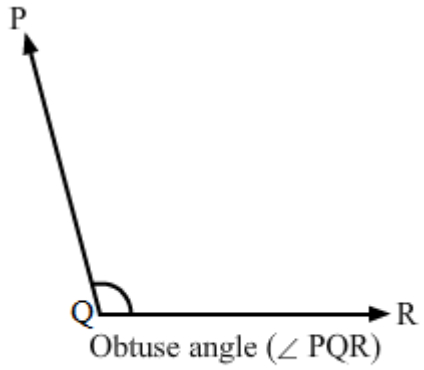
(i) Acute angle



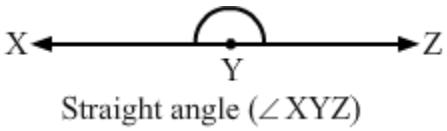
Acute angle (∠AOB)

(ii) Obtuse angle

Aakash Institute



(iii) Straight angle



Page No 182:

ANSWER:

(i) ∠AOB = 45°∠AOB = 45°
(ii) ∠PQR = 75°∠PQR = 75°
(iii) ∠DEF = 135°∠DEF = 135°
(iv) ∠LMN = 55°∠LMN = 55°
(v) ∠TSR = 135°∠TSR = 135°
(vi) ∠GHI = 75°∠GHI = 75°

We have measured all the above angles by placing the protractor on one of the arms of the angle and measuring the angle through the other arm that coincides with the angle on the protractor.

Page No 182:

ANSWER:

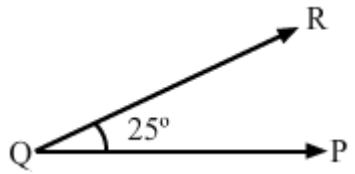
Steps to follow:

1. Draw a ray QP with Q as the initial point.

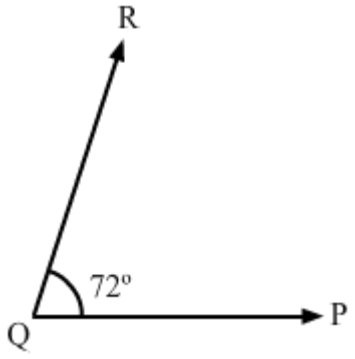
Aakash Institute

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.

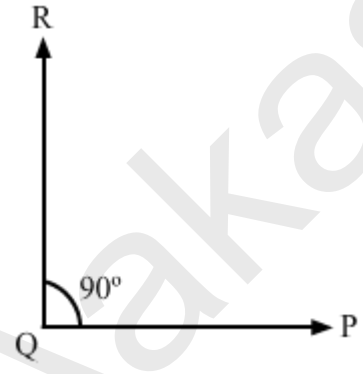
(i)



(ii)

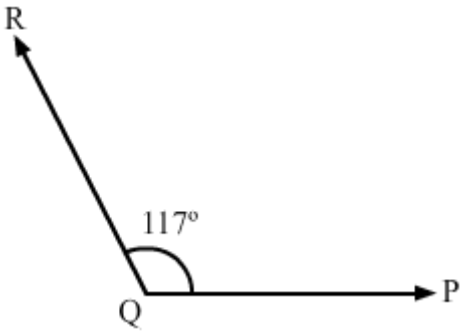


(iii)

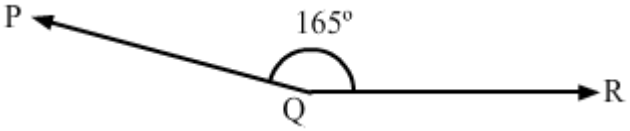


Aakash Institute

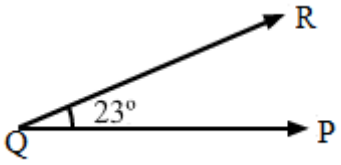
(iv)



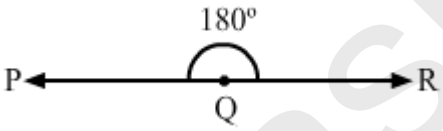
(v)



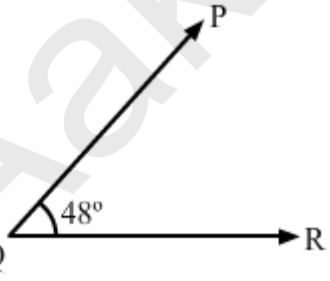
(vi)



(vii)



(viii)



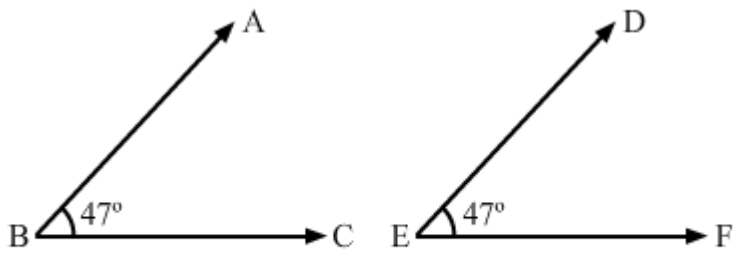
Aakash Institute

Page No 182:

ANSWER:

We can see that $\angle ABC = 47°$∠ABC = 47°.
Steps to follow to construct angle ∠∠DEF equal to ∠∠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. ∠∠DEF = 47°° = ∠∠ABC is the required angle.



$\angle DEF = \angle ABC = 47°$

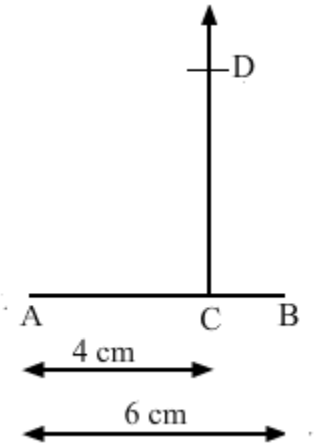
Page No 182:

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.

Aakash Institute

Now, CD ⊥⊥ AB



Page No 182:

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.

Page No 182:

ANSWER:

(c) an angle
The initial point is called the vertex.

Page No 182:

ANSWER:

(c) straight angle

Page No 182:

ANSWER:

(b) right angle

Page No 182:

Aakash Institute

ANSWER:

(b) an obtuse angle
This is because it is more than 90°° but less than 180°°.

Page No 182:

ANSWER:

(d) a reflex angle
This is because it is more than 180°° but less than 360°°.

Page No 182:

ANSWER:

(c) 180°°

Page No 183:

ANSWER:

(c) a reflex angle
This is because it is more than 180°° but less than 360°°.

Page No 183:

ANSWER:

(d) a complete angle
This is because it completes the rotation of 360°°.

Page No 183:

ANSWER:

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

Page No 183:

Aakash Institute

ANSWER:

(b)
2 right angles = $2 \times 90° = 180°$2×90°= 180° (straight angle)

Page No 183:

ANSWER:

(b) 135°°

32 right angle $= 32 \times 90° = 135°$32 right angle =32× 90°=135°

Page No 183:

ANSWER:

(c) 10°°

Number of spokes = 36
Measure of the angle of the wheel = Complete angle = 360°°
Angle between a pair of adjacent spokes=$\text{Measure of angle}\text{Number of spokes} = 360°36 = 10°$

Aakash Institute