

Class: 6
Subject: Mathematics
Topic: Understanding elementary shapes
No. of Questions: 20
Duration: 60 Min
Maximum Marks: 60

Q.1 What fraction of clockwise revolution does the hour hand of a clock turn through, when it goes from 12 to 9?

- a) $1/2$ b) $3/4$ c) $1/4$ d) 1

Solution: b) $3/4$

[Explanation: From 12 to 3 = $1/4$ revolution,
From 3 to 6 = $1/4$ revolution,
From 6 to 9 = $1/4$ revolution.
From 12 to 9 = $1/4 + 1/4 + 1/4 = 3/4$ revolution.]

Q.2 Where will the hour hand of a clock stop if it starts at 5 and makes $1/4$ of a revolution clockwise?

- a) 8 b) 7 c) 9 d) 10

Solution: a) 8

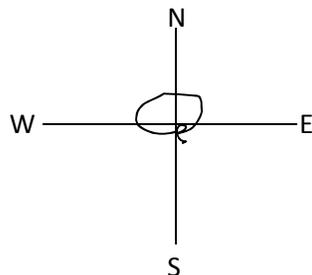
[Explanation: $1/4$ th means 3hrs so $5+3=8$]

Q.3 Which direction will you face if you start facing south and make one full revolution?

- a) North
b) South
c) East
d) West

Solution: b) South

[Explanation:

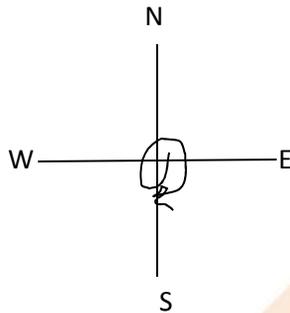


Q.4 What part of revolution have you turned through if you start facing east and make $1\frac{1}{4}$ of a revolution clockwise?

- a) East b) South c) West d) North

Solution: b) South

[Explanation:



Q.5 Find the number of right angles turned through by the hour hand of a clock when it goes from 12 to 6?

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

Solution: b) 2

[Hint: 12 to 3 = 1 right angle,
3 to 6 = 1 right angle]

Q.6 Where will the hour hand of a clock stop if it starts from 10 and turns 3 right angles?

- a) 7 b) 6 c) 5 d) 9

Solution: a) 7

[Explanation: 10 to 1 = 1 right angle,
1 to 4 = 1 right angle,
4 to 7 = 1 right angle,
After 3 right angles the hour hand will stop at 7.]

Q.7 Name the angle which forms between $\frac{1}{4}$ and $\frac{1}{2}$ of a revolution.

- a) Obtuse b) Reflex c) Acute d) Right

Solution: d) Right

[Explanation: $\frac{1}{4}$ revolution = 90°
 $\frac{1}{2}$ revolution = 180°
Angle between $\frac{1}{4}$ and $\frac{1}{2}$ revolution is Right.]

Q.8 Let PQ be the perpendicular to the line segment XY. Let PQ and XY intersect in the point A. What is the measure of $\angle PAY$?

- a) 60° b) 120° c) 90° d) 30°

Solution: c) 90°

[Hint: When line segments are perpendicular to each other they make an angle of 90° .]

Q.9 Name the type of the triangle: $\triangle XYZ$ with $m\angle Y=90^\circ$ and $XY=YZ$.

- a) Right angled scalene triangle
b) Scalene triangle
c) Right angled triangle
d) Right angled isosceles triangle

Solution: d) Right angled isosceles triangle.

[Hint: $XY=YZ$ means isosceles triangle,
 $m\angle Y = 90^\circ$ means right angled triangle.]

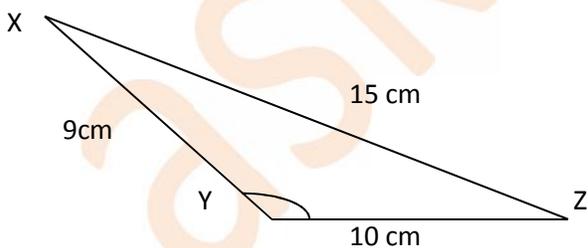
Q.10 Name the triangle having all sides of different length.

- a) Scalene triangle
b) Equilateral triangle
c) Obtuse angled triangle
d) Isosceles triangle

Solution: a) Scalene triangle

[Hint: Fact]

Q.11 Name the following triangle:



- a) Obtuse angled isosceles triangle
b) Obtuse angled scalene triangle
c) Acute angled isosceles triangle
d) Acute angled scalene triangle

Solution: b) Obtuse angled scalene triangle

[Explanation: $XY \neq YZ \neq ZX$ means scalene triangle.

$\angle XYZ > 90^\circ$ means obtuse angled triangle.

Hence, $\triangle XYZ$ is an obtuse angled scalene triangle.]

Q.12 Name the figure having opposite sides parallel and equal.

- a) Rectangle b) Square c) Parallelogram d) Trapezium

Solution: c) Parallelogram.

[Hint: Opposite sides of parallelogram are equal and parallel.]

Q.13 Each angle of a rectangle is a _____ angle.

- a) Right b) Acute c) Obtuse d) Straight

Solution: a) Right

[Explanation: Sides of a rectangle are perpendicular to each other hence forms a right angle.]

Q.14 A rectangle can be thought of as a special parallelogram. Give reason.

- a) All the angles of a rectangle are equal.
b) Adjacent sides of a rectangle are perpendicular to each other.
c) Opposite sides of a rectangle are equal and parallel.
d) Rectangle is a quadrilateral.

Solution: c) Opposite sides of a rectangle are equal and parallel.

[Explanation: Both rectangle and parallelogram has equal and parallel opposite sides. Hence rectangle is a special parallelogram.]

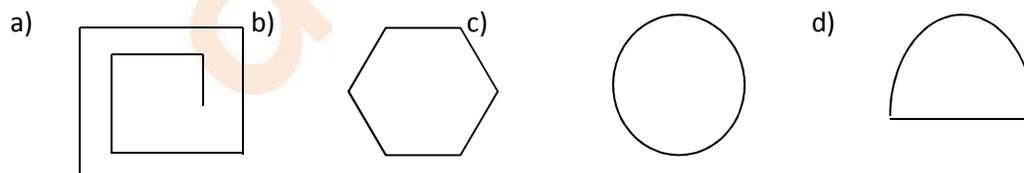
Q.15 Name the quadrilateral whose sides are equal in length and angles are equal in measure.

- a) Rhombus b) Rectangle c) Parallelogram d) Square

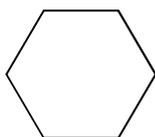
Solution: d) Square

[Explanation: All the sides and angles of a square are equal in length and measure respectively.]

Q.16 Examine which of the following is a polygon.



Solution: b)



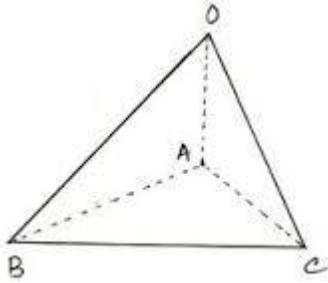
[Hint: It is a six-sided closed figure.]

Q.17 Find the number of edges in a tetrahedron.

- a) 4 b) 5 c) 6 d) 7

Solution: c) 6

[Explanation:



AB, BC, CD, AO, BO and CO are the required edges.]

Q.18 Kaleidoscope looks like which 3-D shape?

- a) Square pyramid b) Cuboids c) Triangular pyramid d) Triangular prism

Solution: d) Triangular prism.

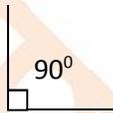
[Hint: fact]

Q.19 Which of the following are models of perpendicular lines:

- a) Lines of a railway track
b) The line segments forming letter 'L'
c) The letter 'V'
d) The letter 'A'

Solution: b) The line segments forming letter 'L'

[Explanation:



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Q.20 An angle whose measure is the sum of the measures of two right angles is _____

- a) Right b) Complete c) Reflex d) Straight

Solution: d) Straight

[Explanation: 2 right angles imply $90^\circ + 90^\circ = 180^\circ$ which is a straight angle.]