

Class.6.Maths By: Prashant Kumar

Understanding Elementary Shapes

(Solved Exercise)

Ex- 5.7

Q1: Say True or False:

- (a) Each angle of a rectangle is a right angle.
- (b) The opposite sides of a rectangle are equal in length.
- (c) The diagonals of a square are perpendicular to one another.
- (d) All the sides of a rhombus are of equal length.
- (e) All the sides of a parallelogram are of equal length.
- (f) The opposite sides of a trapezium are parallel.

Ans:

- (a) True
- (b) True
- (c) True
- (d) True
- (e) False
- (f) False

Q2: Give reasons for the following:

- (a) A square can be thought of as a special rectangle.
- (b) A rectangle can be thought of as a special parallelogram.
- (c) A square can be thought of as a special rhombus.
- (d) Squares, rectangles, parallelograms are all quadrilaterals.
- (e) Square is also a parallelogram.

Ans:

- (a) In a rectangle, all the interior angles are of the same measure, i.e., 90° and only the opposite sides of the rectangle are of the same length whereas in case of a square, all the interior angles are of 90° and all the sides are of the same length. In other words, a rectangle with all sides equal becomes a square. Therefore, a square is a special rectangle.
- (b) Opposite sides of a parallelogram are parallel and equal. In a rectangle, the opposite sides are parallel and equal. Also, all the interior angles of the rectangle are of the same measure, i.e., 90° . In other words, a parallelogram with each angle a right angle becomes a rectangle. Therefore, a rectangle can be thought of as a special parallelogram.
- (c) All sides of a rhombus and a square are equal. However, in case of a square, all interior angles are of 90° measure. A rhombus with each angle a right angle becomes a square. Therefore, a square can be thought of as a special rhombus.
- (d) All are closed figures made of 4 line segments. Therefore, all these are quadrilaterals.
- (e) Opposite sides of a parallelogram are parallel and equal. In a square, the opposite sides are parallel and the lengths of all the four sides are equal. Therefore, a square can be thought of as a special parallelogram.

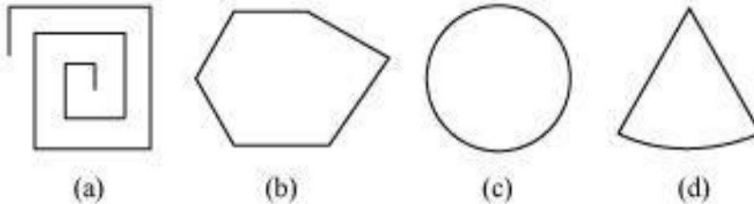
Q3: A figure is said to be regular if its sides are equal in length and angles are equal in measure. Can you identify the regular quadrilateral?

Ans:

In a square, all the interior angles are of 90° and all the sides are of the same length. Therefore, a square is a regular quadrilateral.

Ex-5.8

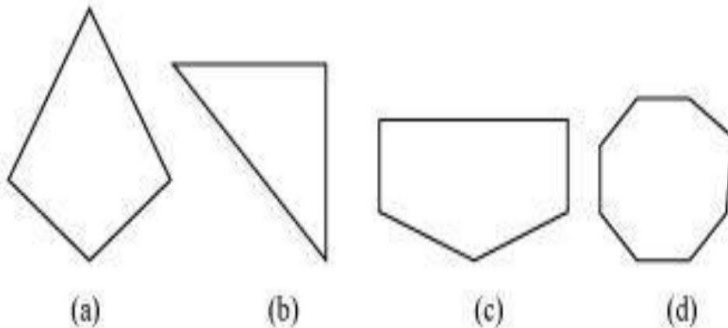
Q1: Examine whether the following are polygons. If any one among them is not, say why?



Ans:

- (a) It is not a polygon as it is not a closed figure.
- (b) Yes, it is a polygon made of 6 sides.
- (c) No, it is not made of line segments.
- (d) No, it is not made of only line segments.

Q2: Name each polygon.

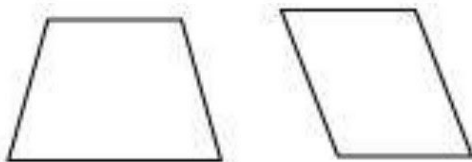


Make two more examples of

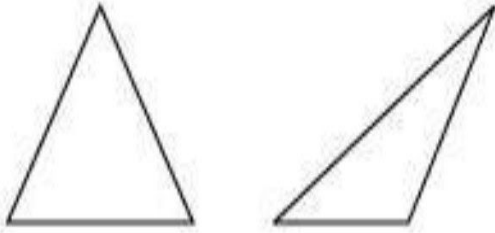
each of these.

Ans:

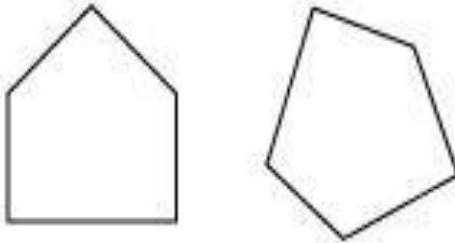
(a) The given figure is a quadrilateral as this closed figure is made of 4 line segments. Two more examples are



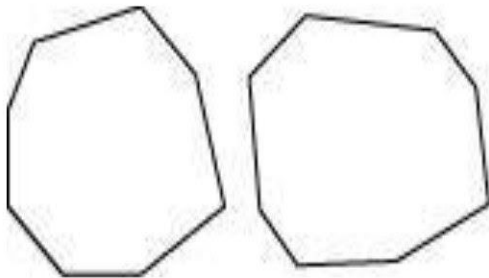
(b) The given figure is a triangle as this closed figure is made of 3 line segments. Two more examples are



(c) The given figure is a pentagon as this closed figure is made of 5 line segments. Two more examples are



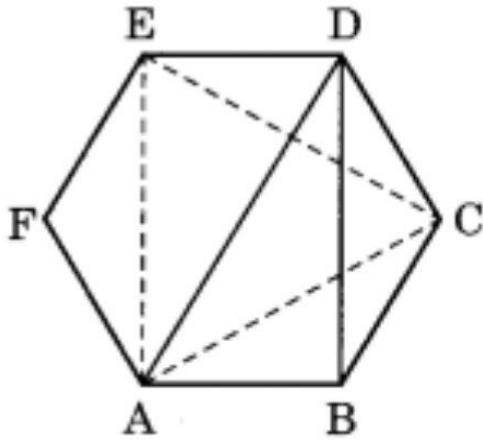
(d) The given figure is an octagon as this closed figure is made of 8 line segments. Two more examples are



Q3: Draw a rough sketch of a regular hexagon. Connecting any three of its vertices, draw a triangle. Identify the type of the triangle you have drawn.

Ans:

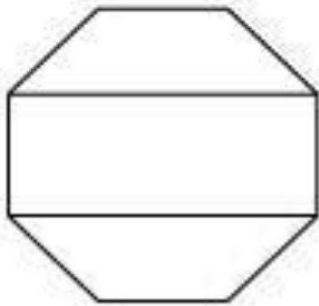
ABCDEF is a rough sketch of a regular hexagon. If we join any three vertices like D, A and B, we get a scalene triangle DAB.



- If we join the alternate vertices E, A and C, we get an equilateral triangle EAC.
- And if we join the alternate vertices D, B and C, we get an isosceles triangle DBC.

Q4: Draw a rough sketch of a regular octagon. (Use squared paper if you wish). Draw a rectangle by joining exactly four of the vertices of the octagon.

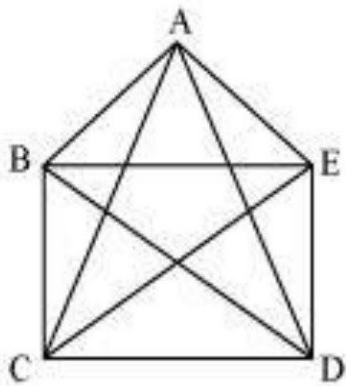
Ans:



Q5: A diagonal is a line segment that joins any two vertices of the polygon and is not a side of the polygon. Draw a rough sketch of a pentagon and draw its diagonals.

Ans:

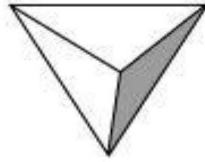
It can be observed here that AC, AD, BD, BE, CE are the diagonals.



Q1: Match the following:

(a) Cone

(i)



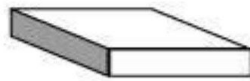
(b) Sphere

(ii)



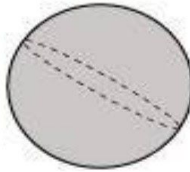
(c) Cylinder

(iii)



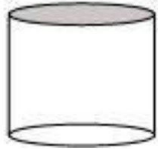
(d) Cuboid

(iv)



(e) Pyramid

(v)



Give two new examples of each shape.

Ans:

- (a) (ii)
- (b) (iv)
- (c) (v)
- (d) (iii)
- (e) (i)

Q2: What shape is

- (a) Your instrument box? (b) A brick?
- (c) A match box? (d) A road-roller?
- (e) A sweet laddu?

Ans:

- (a) Cuboid
- (b) Cuboid

- (c) Cuboid
- (d) Cylinder
- (e) Sphere