MATHS

NCERT - NCERT MATHEMATICS(ENGLISH)

UNDERSTANDING ELEMENTARY SHAPES

Exercise 5 6

1. Name the types of following triangles : (a) Triangle with lengths of sides $7cm, 8cm$ and $9cm.$ (b) $\Delta ABC with AB = 8.7cm, AC = 7cm$ and $BC = 6cm.$ (c) ΔPQR such that $PQ = QR = PR = 5cm.$ (d) `Delta m

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2. Match the following :Measures of Triangle

Type of Triangle(i) 3 sides of equal length (a)

Scalene(ii) 2 sides of equal length (b) Isosceles

right angled(iii) All sides are of different length (c)

Obtuse angled(iv) 3 acute angles (d)

Right angled(v) 1 right angle (e)

Equilateral(vi) 1 obtuse angle (f) Acute

angled(vii) 1 right angle with two sides of equal length

(g) Isosceles

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3. Name each of the following triangles in two different ways: (you may judge the nature of the angle by observation)

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4. Try to construct triangles usingmatch sticks. Some are shown here.Can you make a triangle with(a) 3 matchsticks?(b) 4 matchsticks?(c) 5 matchsticks?(d) 6 matchsticks?(Remember you have to use all theavailable matchsticks in each case)Name the type of triangle in each case.If you cannot make a triangle, think of reasons for it

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Exercise 5 2

1. What part of a revolution have you turned through if you stand facing(a) east and turn clockwise to face north?(b) south and turn clockwise to face east?(c) west and turn clockwise to face east?

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2. Find the number of right angles turned through by the hour hand of a clock when it goes from(a) 3 to 6 (b) 2 to 8 (c) 5 to 11(d) 10 to 1 (e) 12 to 9 (f) 12 to 6

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3. How many right angles do you make if you start facing(a) south and turn clockwise to west?(b) north and turn anti-clockwise to east?(c) west and turn to west?(d) south and turn to north?

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4. Where will the hour hand of a clock stop if it starts(a) from 6 and turns through 1 right angle?(b) from 8 and turns through 2 right angles?(c) from 10 and turns through 3 right angles?(d) from 7 and turns through 2 straight angles?

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5. What fraction of a clockwise revolution does the hour hand of a clock turn through, when it goes from(a) 3 to 9 (b) 4 to 7 (c) 7 to 10(d) 12 to 9 (e) 1 to 10 (f) 6 to 3

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6. Where will the minute hand of a clock stop if it (a) starts at 12 and makes $\frac{1}{2}$ of a revolution, clockwise? (b) starts at 2 and makes $\frac{1}{2}$ of a revolution, clockwise? (c) starts at 5 and makes $\frac{1}{4}$ of a revolution, clockwise? (d) starts at 5 and makes $\frac{3}{4}$ of a revolution, clockwise?

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7. Which direction will you face if you start facing (a) east and make $\frac{1}{2}$ of a revolution clockwise? (b) east and make $(1)\frac{1}{2}$ of a revolution clockwise? (c) west and make $\frac{3}{4}$ of a revolution anti-clockwise? (d) south and make one full revolution? (Should we specify clockwise or anti-clockwise for this last question? Why not?)

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Exercise 5 8

1. 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.

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2. 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.

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3. Name each polygon. Make two more examples of each of these.

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4. 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.

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

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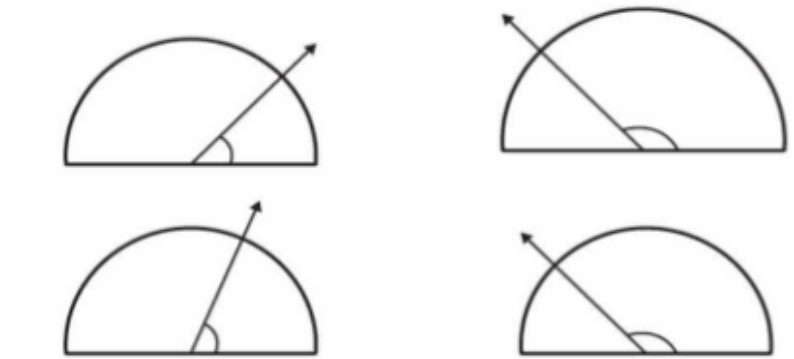
Exercise 5 4

1. Find the measure of the angle shown in each figure. (First estimate with your eyes and then find the actual measure with a protractor).



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2. Find the angle measure between the hands of the clock in each figure :

9.00 am

1.00 pm

6.00 pm

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3. Say True or False : (a) The measure of an acute angle $< 90^{\circ}$. (b) The measure of an obtuse angle $< 90^{\circ}$ (c) The measure of a reflex angle $< 1806 \circ$ (d) The measure of one complete revolution $= 360^{\circ}$. (e) If m?

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4. Write down the measures of(a) some acute angles. (b) (b) some obtuse angles (give at least two examples of each)

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5. What is the measure of (i) a right angle? (ii) a straight angle?

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6. From these two angles which haslarger measure? Estimate and thenconfirm by measuring them.

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7. Fill in the blanks with acute, obtuse,right or straight : (a) An angle whose measure is less than that of a right angle is_____.(b) An angle whose measure is greater than that of a right angle is _____.(c) An angle whose measure is the sum of the measures of two right anglesis ____.(d) When the sum of the measures of two angles is that of a right angle, then each one of them is _____.(e) When the sum of the measures of two angles is that of a straight angle and if one of them is acute then the other should be _____.

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8. 3.write down the measures:(a) some acute angles (b) some obtuse angles.4. Measure the angles given below using the Protractor and write down the measure

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9. Which angle has a large measure? First estimate and then measure. Measure of $\angle A =$ Measure of $\angle B =$

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Exercise 5 3

1. Classify each one of the following angles as right, straight, acute, obtuse or reflex

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2. Match the following : (i) straight angle (a) Less than one-fourth of a revolution (ii) Right angle (b) More than half a revolution (iii) Acute angle (c) Half of a revolution (iv) Obtuse angle $(d)O \neq -fourthofarevolution(v)Ref \leq x\angle(e)Between$ 1/4 and 1/2` of a revolution (f) One complete revolution

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Exercise 5 9

1. 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

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2. What shape is(a) Your instrument box? (b) A brick?(c) A match box? (d) A road-roller?(e) A sweet laddu?

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Exercise 5 1

1. What is the disadvantage in comparing line segments by mere observation?

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2. Draw any line segment, say AB. Take any point C lying in between AandB. Measure the lengths of AB, BC and $AC. IsAB = AC + CB$ [Note : If A, B, C are any three points on a line such that $AC + CB = AB$, then we can be sure that C lies between A and B.

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3. Why is it better to use a divider than a ruler, while measuring the length of a line segment?

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4. Verify, whether D is the mid point of AG.

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5. If A,B,C are three points on a line such that $AB = 5cm$, $BC = 3cm$ and $AC = 8cm$, which one of them lies between the other two?

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6. Draw five triangles and measure their sides. Check in each case, if the sum of the lengths of any two sides is always less than the third side.

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7. If B is the mid point of AC and C is the mid point of $BD, where A, B, C, D$ lie on a straight line, say why $AB = CD$?

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Exercise 5 7

1. 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?

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2. 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.

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3. 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.

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Exercise 5 5

1. Study the diagram. The line l is perpendicular to line m (a) Is $CE = EG$ (b) Does PE bisect CG = (c) Identify any

two line segments for which PE is the perpendicular bisector. (d) Are these true? (i) $AC > EG$ (ii) $CD = GH$ (iii) `BC

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2. Which of the following are models for perpendicular lines :(a) The adjacent edges of a table top.(b) The lines of a railway track.(c) The line segments forming the letter 'L'.(d) The letter V.

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3. There are two set-squares in your box. What are the measures of the angles that are formed at their corners?

Do they have any angle measure that is common?

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4. Let PQ be the perpendicular to the line segment XY. Let PQ and XY intersect in the point A. What is the measure of ?PAY?

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