

MATHS

BOOKS - SUBHASH PUBLICATION

Understanding Elementary Shapes

Exercise

1. What fraction of a clockwise revolution does the hour hand of a clock turn through, When it goes from (a) 3 to 9

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2. What fraction of a clockwise revolution does the hour hand of a clock turn through, When it goes from (b) 4 to 7

 [doubtnut](#)

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3. What fraction of a clockwise revolution does the hour hand of a clock turn through, When it goes from (c) 7 to 10

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4. What fraction of a clockwise revolution does the hour hand of a clock turn through, When it goes from (d) 12 to 9

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5. What fraction of a clockwise revolution does the hour hand of a clock turn through, When it goes from (e) 1 to 10

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6. What fraction of a clockwise revolution does the hour hand of a clock turn through, When it goes from (f) 6 to 3

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7. Where will the hand of a clock stop if it (a) starts at 12 and makes $\frac{1}{2}$ of a revolution, clockwise?

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8. Where will the hand of a clock stop if it (b) starts at 2 and makes $\frac{1}{2}$ of a revolution, clockwise?

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9. Where will the hand of a clock stop if it (c) starts at 5 and makes $\frac{1}{4}$ of a revolution, clockwise?



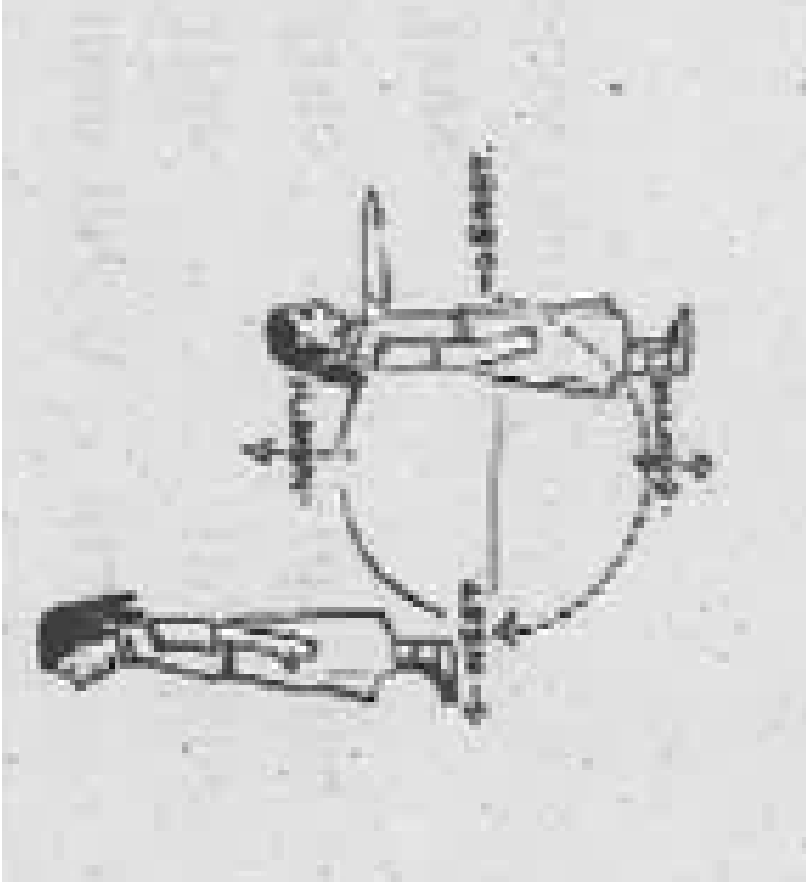
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10. Where will the hand of a clock stop if it (d) starts at 5 and makes $\frac{3}{4}$ of a revolution, clockwise?



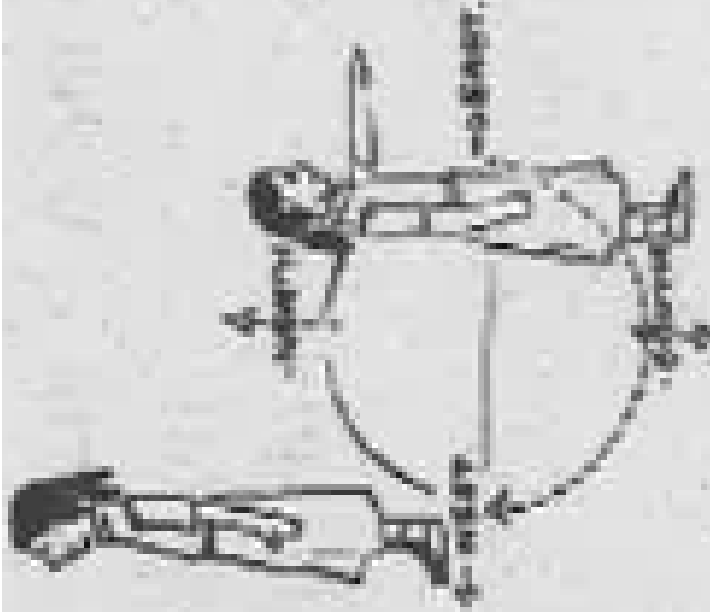
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11. Which direction will you face if you start facing (a) east and make $\frac{1}{2}$ of a revolution clockwise?



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12. Which direction will you face if you start facing (b) east and make $1\frac{1}{2}$ of a revolution clockwise?

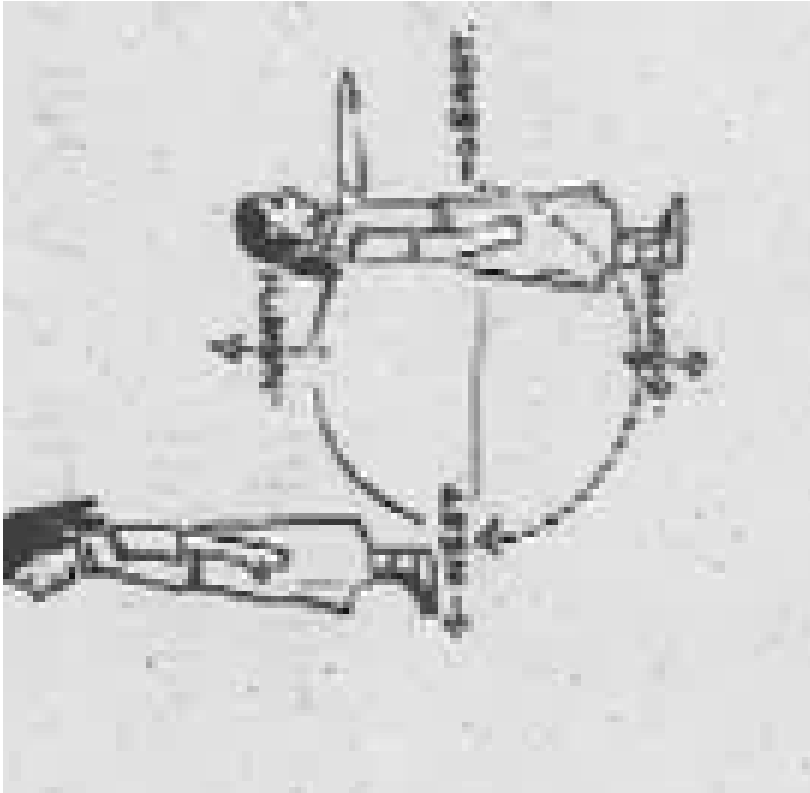


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13. Which direction will you face if you start facing (c) west and make $\frac{3}{4}$ of a revolution anticlockwise?

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14. Which direction will you face if you start facing (d) south and make one full revolution? (Should we specify clockwise or anticlockwise for this last question? Why not?)



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15. What part of a revolution have you turned through if you stand facing (a) east and turn clockwise to face north?



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



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



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18. Find the number of right angles turned through by the hour hand of a clock when it goes from (a) 3 to 6



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19. Find the number of right angles turned through by the hour hand of a clock when it goes from (b) 2 to 8

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20. Find the number of right angles turned through by the hour hand of a clock when it goes from (c) 5 to 11

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21. Find the number of right angles turned through by the hour hand of a clock when it goes from (d) 10 to 1

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22. Find the number of right angles turned through by the hour hand of a clock when it goes from (e) 12 to 9



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23. Find the number of right angles turned through by the hour hand of a clock when it goes from (f) 12 to 6



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24. How many right angles do you make if you start facing (a) south and turn clockwise to west?



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25. How many right angles do you make if you start facing (b) north and turn anti-clockwise to east?



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26. How many right angles do you make if you start facing (c) west and turn to west?

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27. How many right angles do you make if you start facing (d) south and turn to north?

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28. Where will the hour hand of a clock stop if it starts (a) from 6 and turns through 1 right angle?

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29. Where will the hour hand of a clock stop if it starts (b) from 8 and turns through 2 right angles?



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30. Where will the hour hand of a clock stop if it starts (c) from 10 and turns through 3 right angles?



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31. Where will the hour hand of a clock stop if it starts (d) from 7 and turns through 2 right angles?



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32. 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) One-fourth of a revolution
(v) Reflex angle	(e) Between $\frac{1}{4}$ and $\frac{1}{2}$ of a revolution
	(f) One complete revolution

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33. Give two new examples of each shape. Cone :

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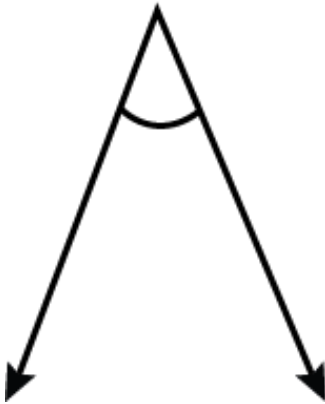
34. Give two new examples of each shape. Sphere :

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35. Give two new examples of each shape. Cylinder

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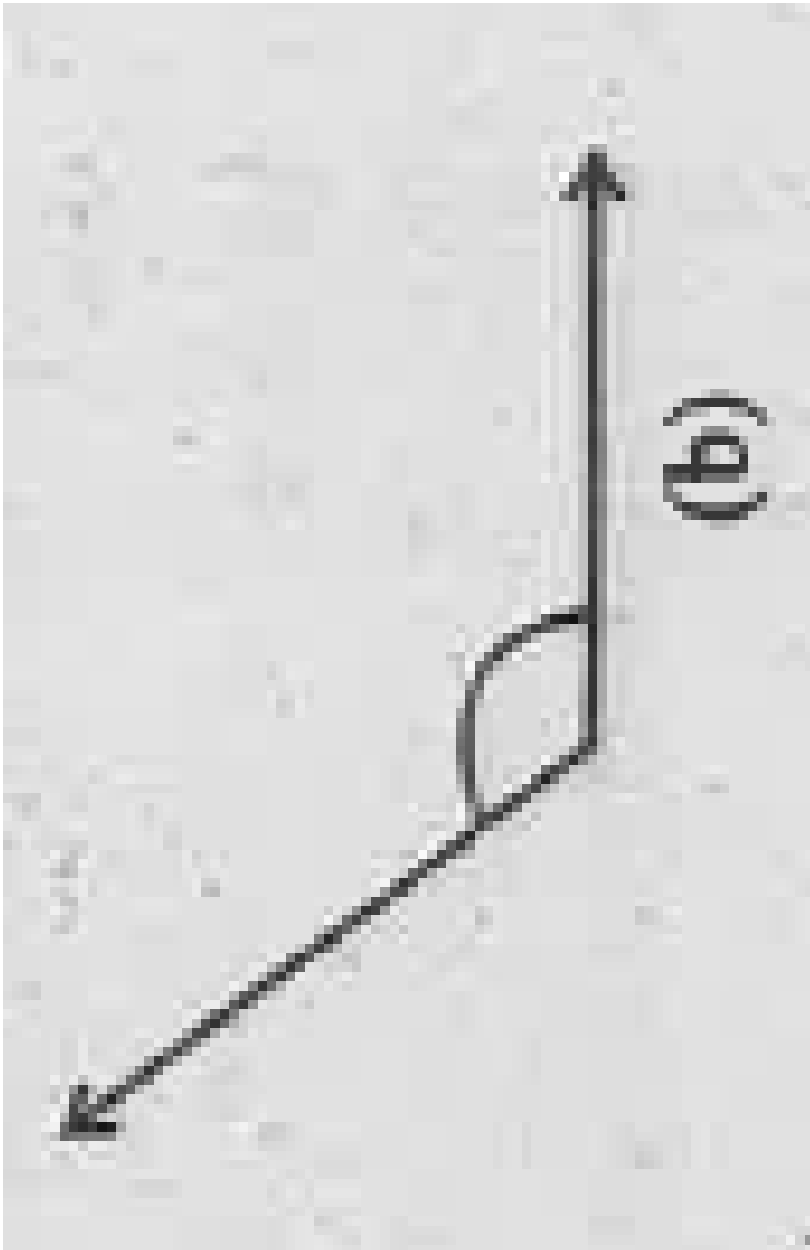
36. Classify each one of the following angles as right, straight, acute,



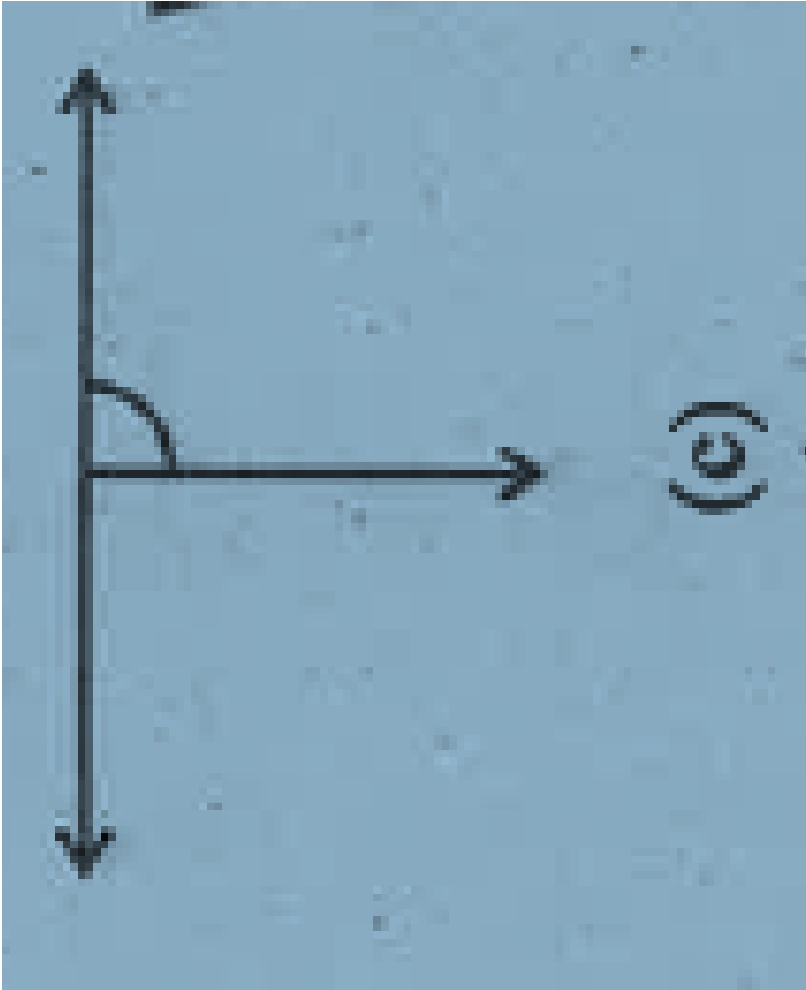
obtuse or reflex: (a)


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37. Classify each one of the following angles as right, straight, acute, obtuse or reflex:(b)



38. Classify each one of the following angles as right, straight, acute, obtuse or reflex:(c)



39. Classify each one of the following angles as right, straight, acute, obtuse or reflex:(d)  q2-classify-each-one-of-the-fo | LIDO

A.  q2-classify-each-one-of-the-fo | LIDO


B.

C.

D.

Answer:

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40. Classify each one of the following angles as right, straight, acute, obtuse or reflex:(e)  q2-classify-each-one-of-the-fo | LIDO

A.  q2-classify-each-one-of-the-fo | LIDO

B.

C.

D.

Answer:



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41. Classify each one of the following angles as right, straight, acute, obtuse or reflex:(f)



A. q2-classify-each-one-of-the-fo | LIDO

B.

C.

D.

Answer:



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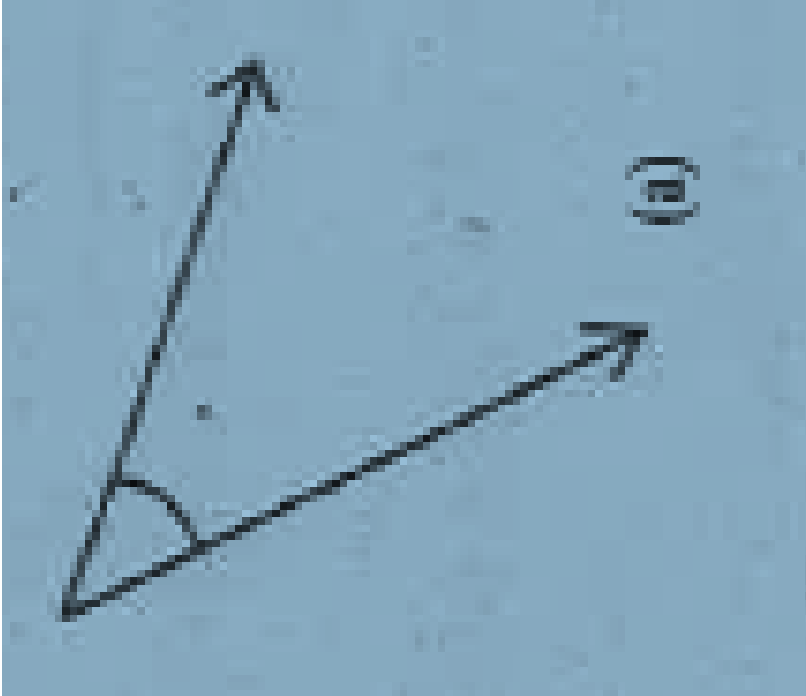
42. Say True or False : (c) The measure of a reflex angle $>180^\circ$.

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43. Say True or False : (d) The measure of one complete revolution = 360° .

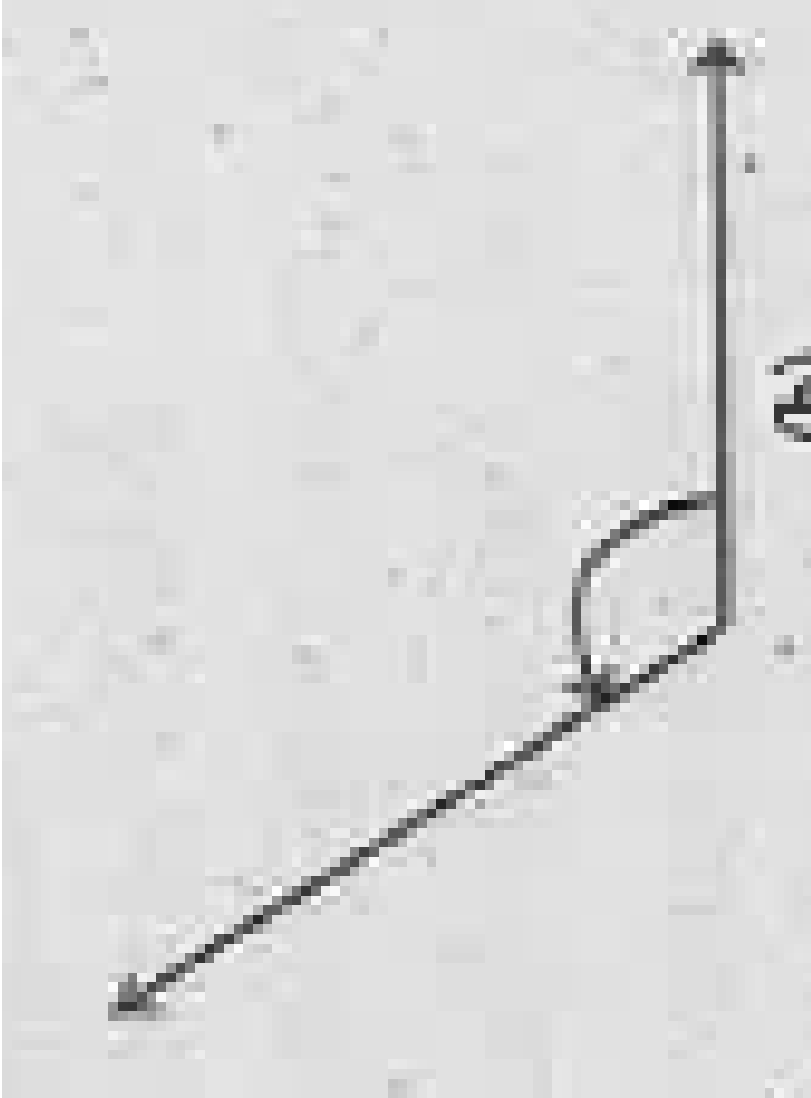
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44. Measure the angle given below using the Protractor and write down the measure. (a)



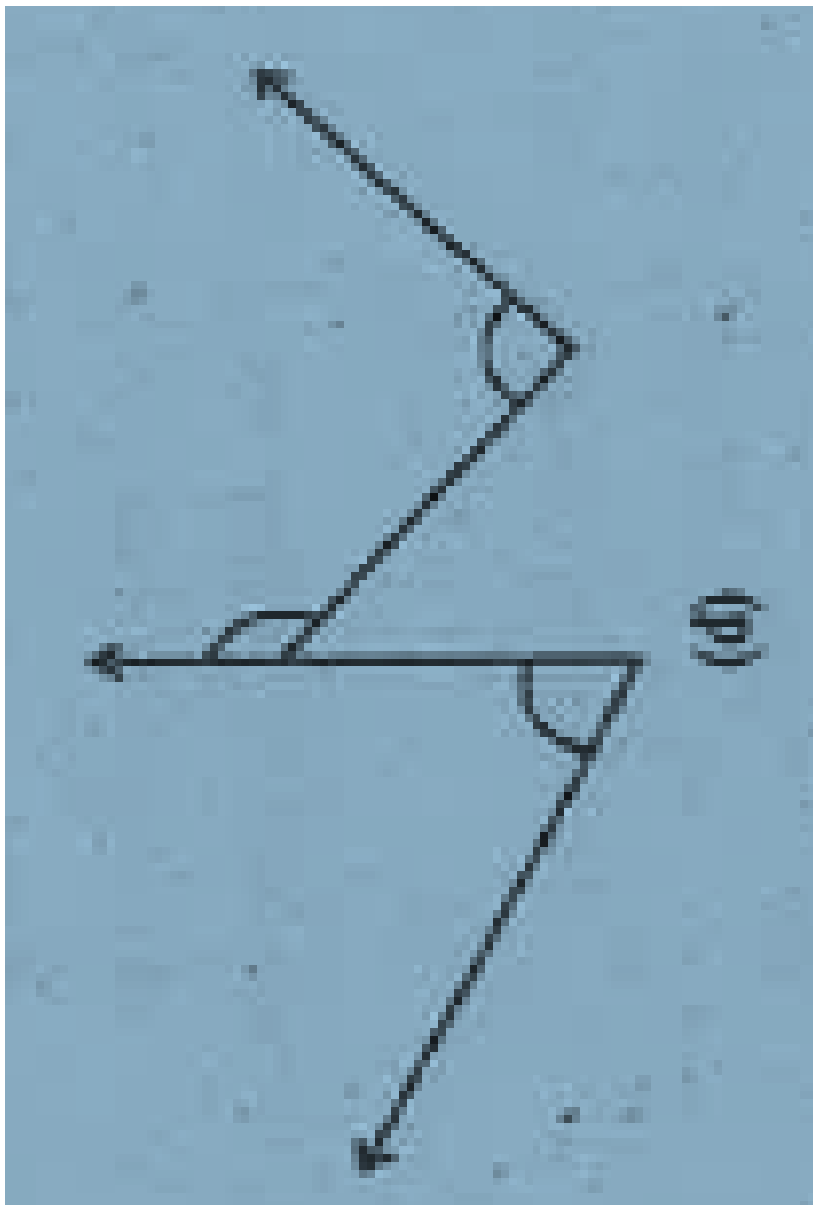
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45. Measure the angle given below using the Protractor and write down the measure. (b)



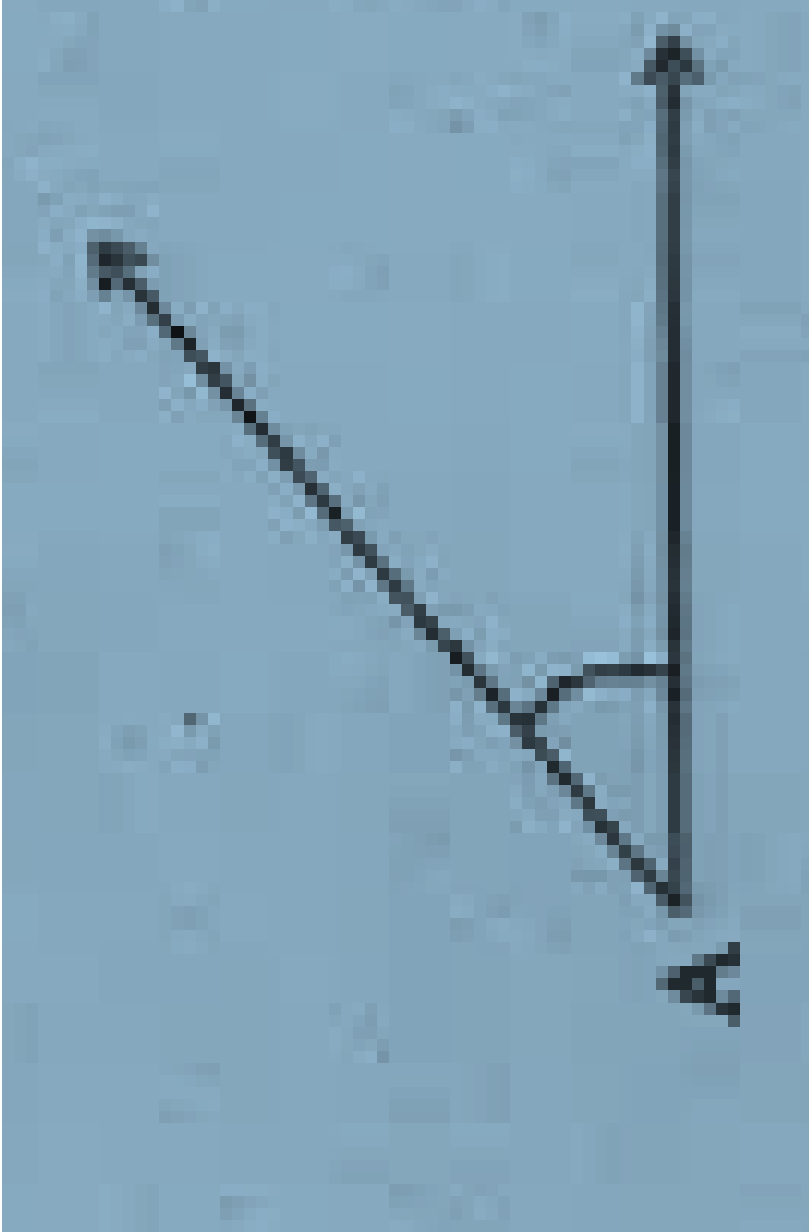
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46. Measure the angle given below using the Protractor and write down the measure. (d)



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47. Which angle has a large measure? First estimate and then measure.



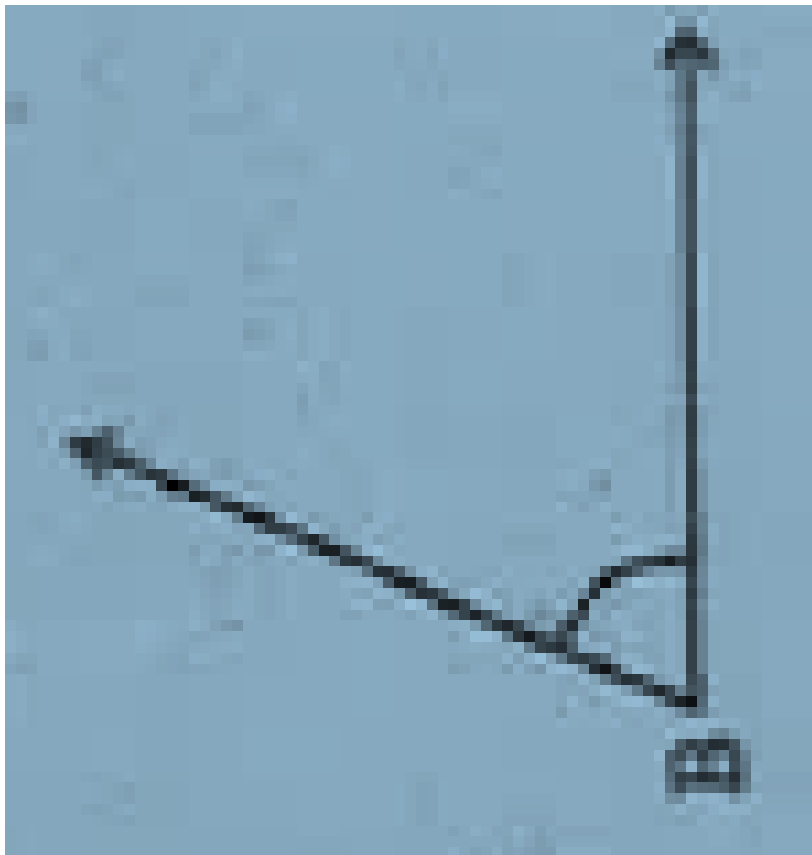
Measure of

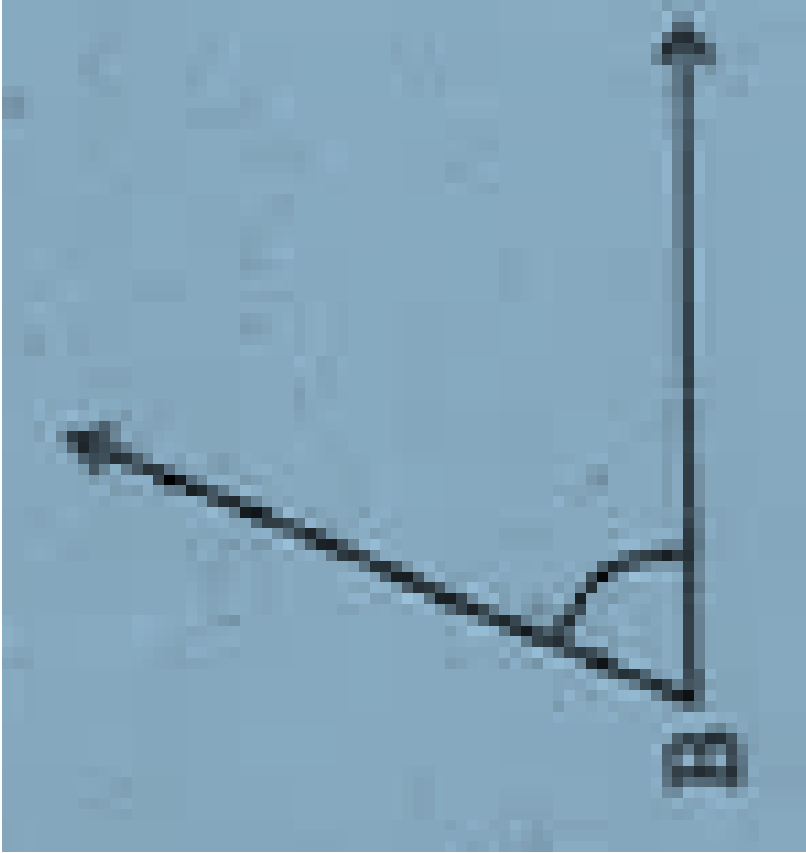
Angle A=



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48. Which angle has a large measure? First estimate and then measure.





Measure of

Angle B=

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49. From these two angles which has larger measure? Estimate and then confirm by measuring them.





45°



30°



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50. Fill in the blanks with acute, obtuse, right or straight: (c) An angle whose measure is the sum of the measures of a right angle is _____.



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51. Fill in the blanks with acute, obtuse, right or straight: (d) when the sum of the measures two angles is that of a right angle, then each one of them is _____.



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52. Fill in the blanks with acute, obtuse, right or straight: (e) when the sum of the measures two angles is that of a straight angle and if one

of them is acute then the other should be_____.



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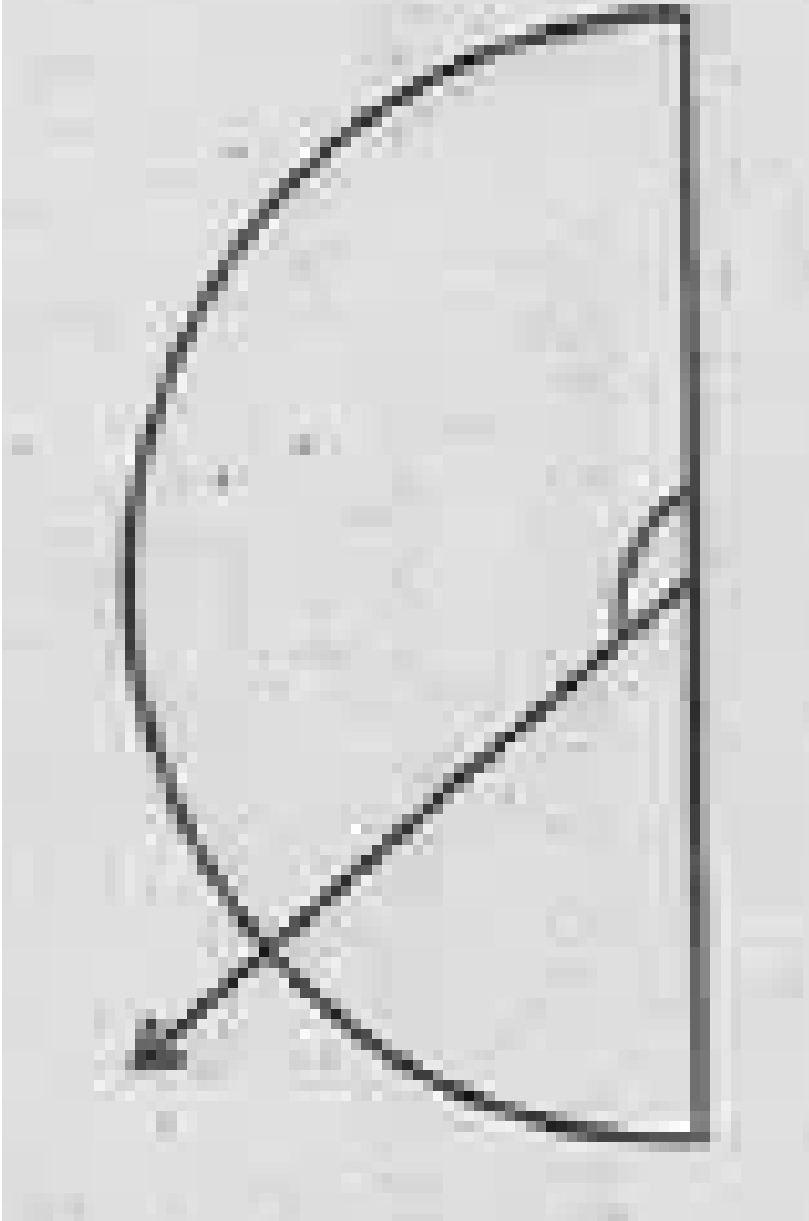
53. Find the measure of the angle shown in each figure. (First the actual measure with a protractor).





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54. Find the measure of the angle shown in each figure. (First the actual measure with a protractor).



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55. Find the measure of the angle shown in each figure. (First the actual measure with a protractor).



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



Telling Time Telling time is important! And to tell time, you need to know how to read a clock. The hour hand is the shorter hand. The minute hand is the longer hand. Hour hand For example, at 3:00, the hour hand will point directly at the 3.

A. When the hour ...

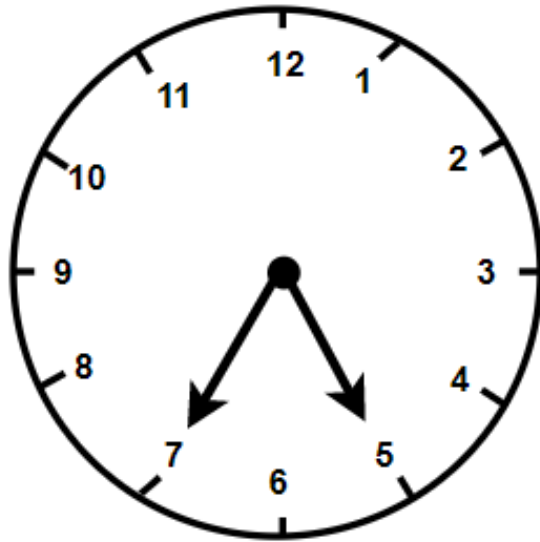
B.

C.

D.

Answer:

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



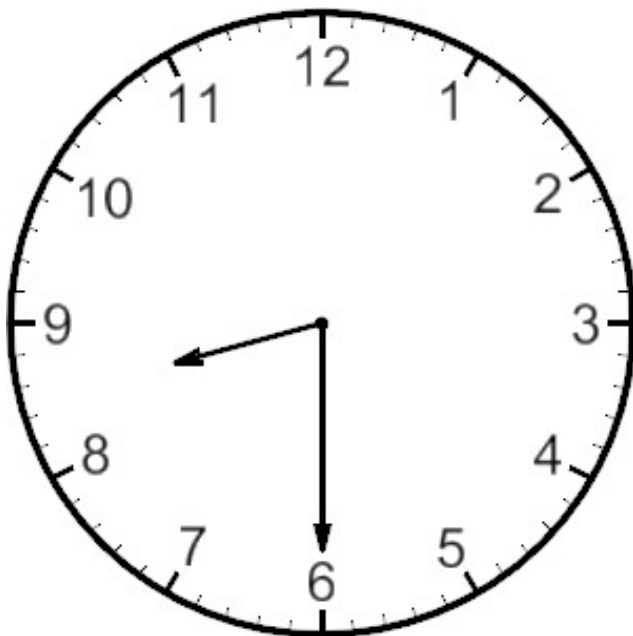
- A.
- B.
- C.
- D.

Answer:



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



A.

B.

C.

D.

Answer:

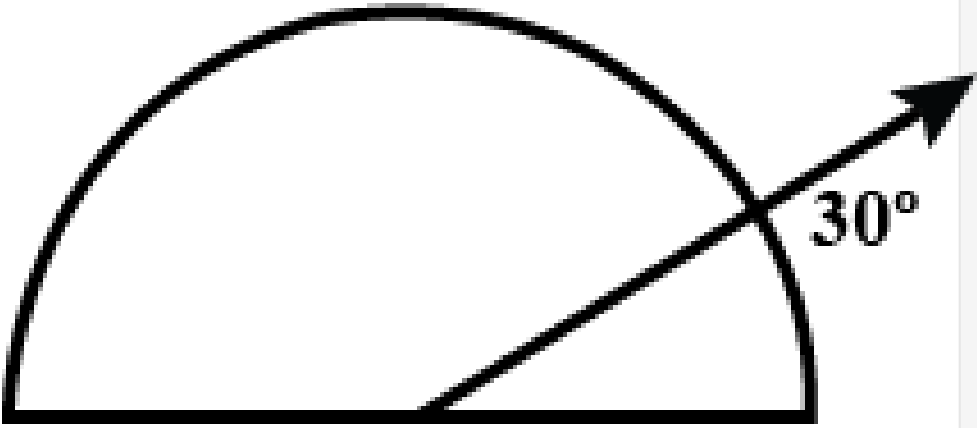


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59. Investigate In the given figure, the angle measures 30° . Look at the same figure through a magnifying glass. Does the angle becomes larger? Does the size of the angle change?



A.



B.

C.

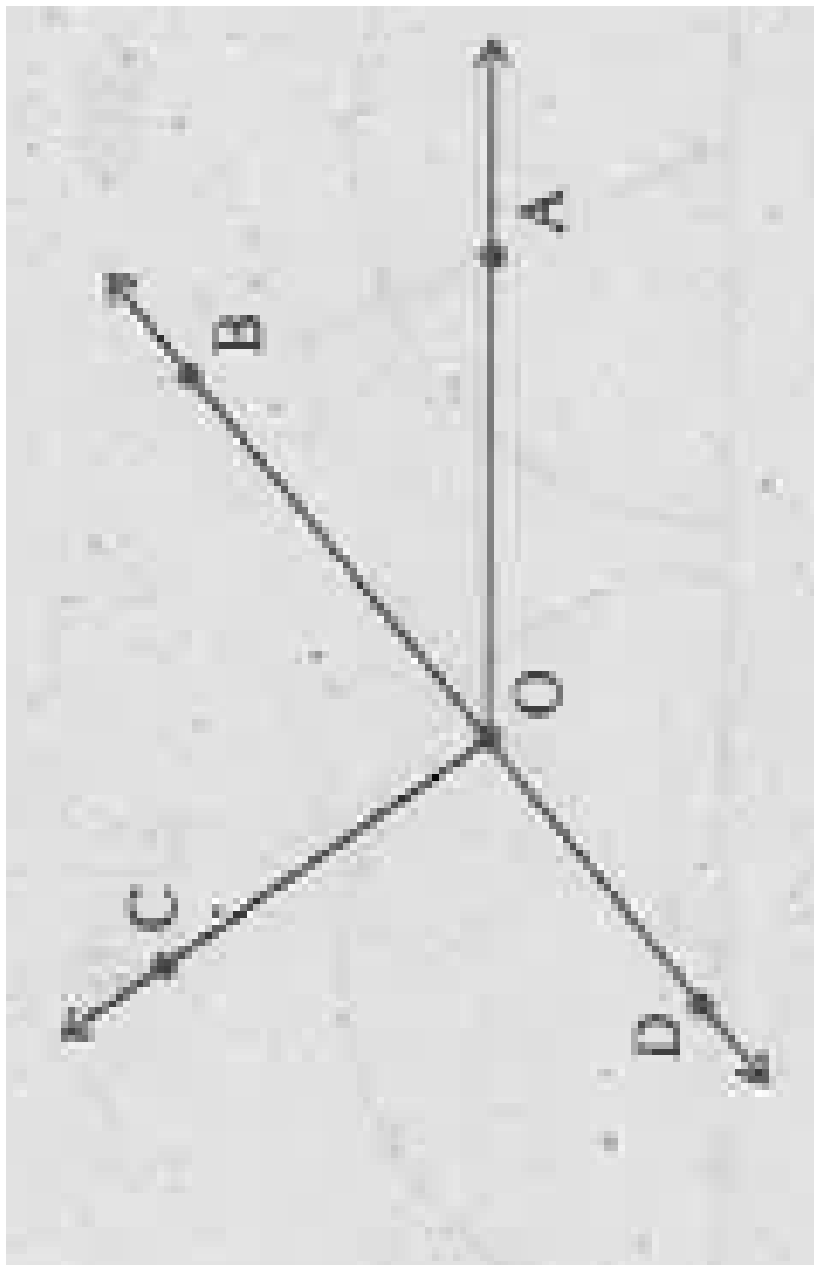
D.

Answer:



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60. Measure and classify each angle :



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61. Which of the following are models for perpendicular lines : (b) The lines of a railway track.

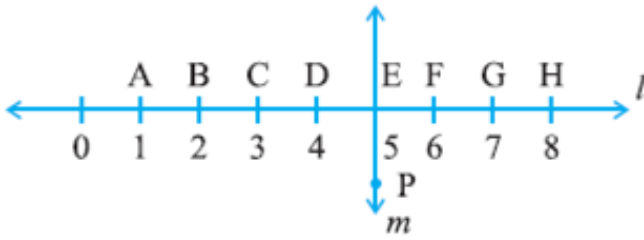
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62. Let \overline{PQ} be the perpendicular to the line segment \overline{XY} . Let \overline{PQ} and \overline{XY} intersect in the point A. What is the measure of $\angle A$

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63. Study the diagram. The line l is perpendicular to line m

(a) Is $CE=EG$?



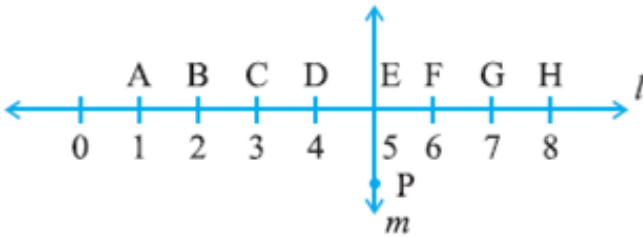
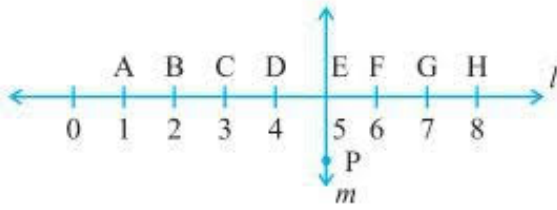
- A.
- B.
- C.
- D.

Answer:

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64. Study the diagram. The line l is perpendicular to line m

(b) Does PE bisect CG?



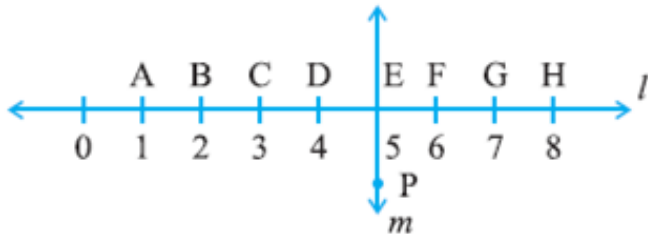
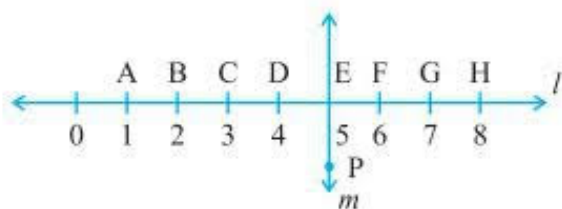
- A.
- B.
- C.
- D.

Answer:

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65. Study the diagram. The line l is perpendicular to line m

(c) Identify any two line segments for which PE is the perpendicular bisector.



A.

B.

C.

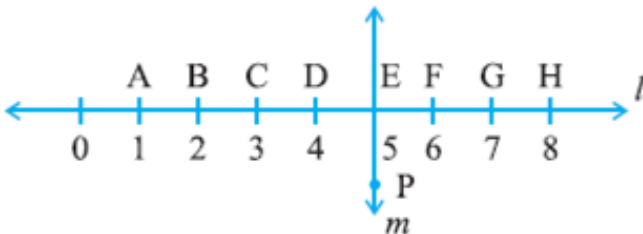
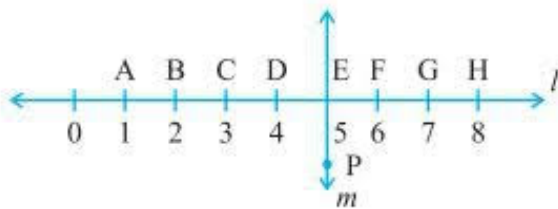
D.

Answer:

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66. Study the diagram. The line l is perpendicular to line m

(d) Are these true? (i) $AC > FG$



A.

B.

C.

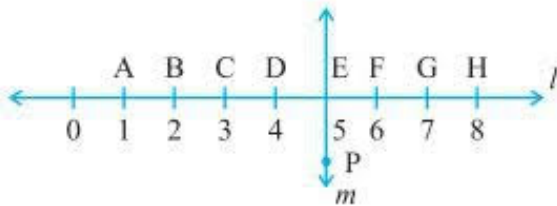
D.

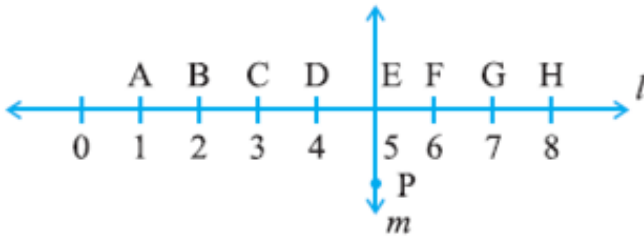
Answer:

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67. Study the diagram. The line l is perpendicular to line m

(d) Are these true? (ii) $CD = GH$





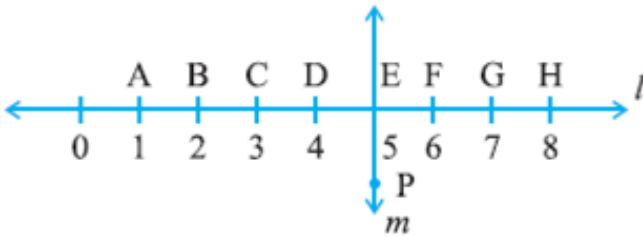
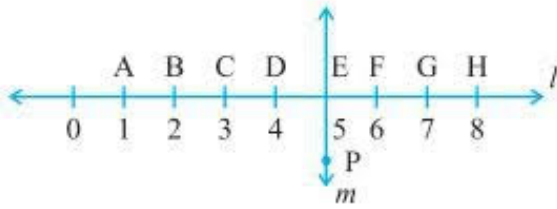
- A.
- B.
- C.
- D.

Answer:

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68. Study the diagram. The line l is perpendicular to line m

(d) Are these true? (iii) $BC < EH$



- A.
- B.
- C.
- D.

Answer:

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69. Name the types of following triangles:(a) Triangle with lengths of sides 7 cm, 8 cm and 9 cm.

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70. Name the types of following triangles:(b) $\triangle ABC$ with $AB=8.7$ cm, $AC=7$ cm and $BC = 6$ cm.

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71. Name the types of following triangles:(c) $\triangle PQR$ such that $PQ = QR = PR = 5$ cm.

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72. Name the types of following triangles:(d) $\triangle DEF$ with $m\angle D = 90^\circ$

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73. Name the types of following triangles:(e) ΔXYZ with $m\angle Y = 90^\circ$ and $XY = YZ$.

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74. Name the types of following triangles:(f) ΔLMN with $m\angle L = 30^\circ$, $m\angle M = 70^\circ$ and $m\angle N = 80^\circ$

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75. Match the following : Measures of Triangle Type of Triangle (ii)
2sides of equal length

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76. Match the following : Measures of Triangle Type of Triangle (iii) All sides are of different length

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77. Match the following : Measures of Triangle Type of Triangle (iv) 3 acute angles

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78. Match the following : Measures of Triangle Type of Triangle (v) 1 right angle

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79. Match the following : Measures of Triangle Type of Triangle (vi) 1
obtuse angle



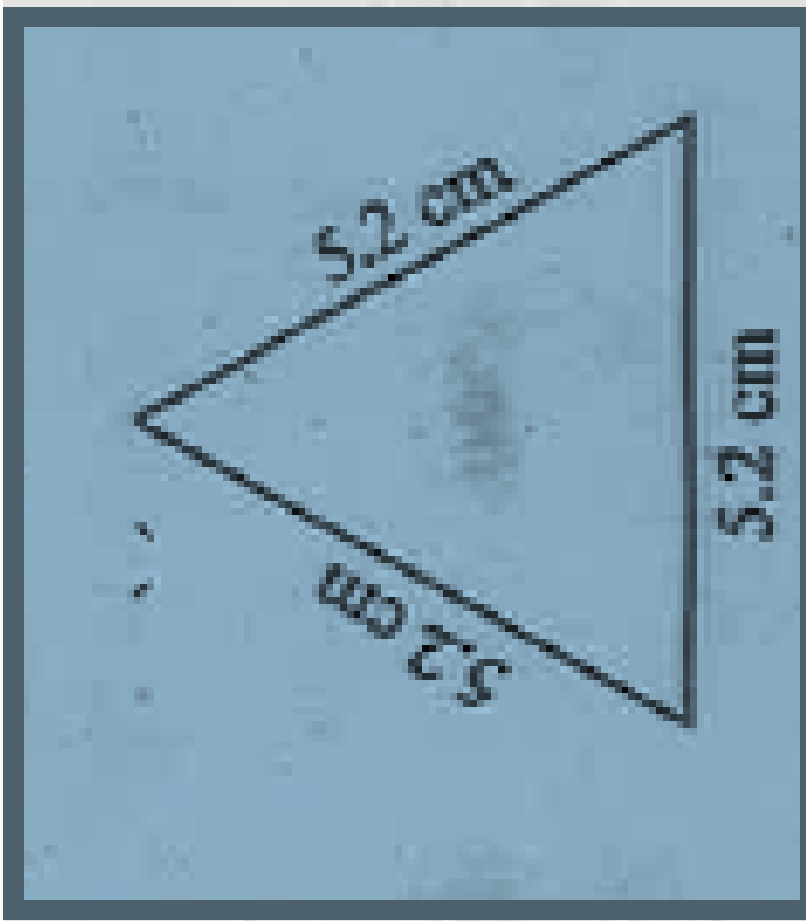
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80. Match the following : Measures of Triangle Type of Triangle (vii) 1
right angle with two sides of equal length



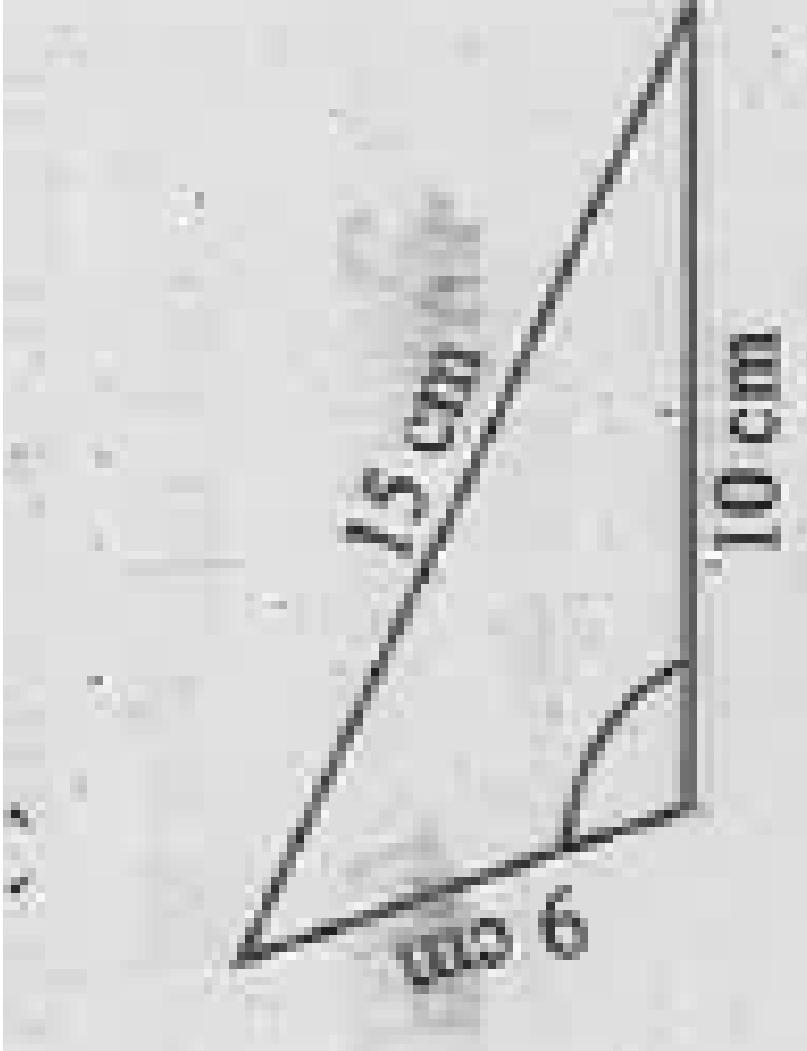
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81. Name each of the following triangles in two different ways: (you
may judge the nature of the angle by observation)(e)



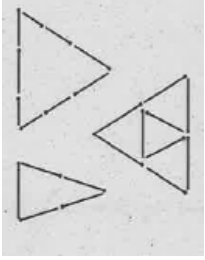
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82. Name each of the following triangles in two different ways: (you may judge the nature of the angle by observation)(f)



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83. Try to construct triangles using match sticks. Some are shown here. Can you make a triangle with (a) 3 matchsticks?

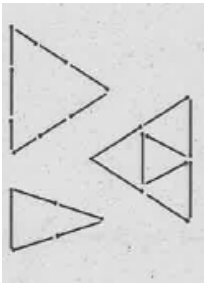


(Remember you have to use all the available matchsticks in each case)

Name the type of triangle in each case. If you cannot make a triangle, think of reasons for it.

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84. Try to construct triangles using match sticks. Some are shown here. Can you make a triangle with (b) 4 matchsticks?

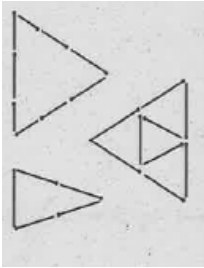


(Remember you have to use all the available matchsticks in each case)

Name the type of triangle in each case. If you cannot make a triangle, think of reasons for it.

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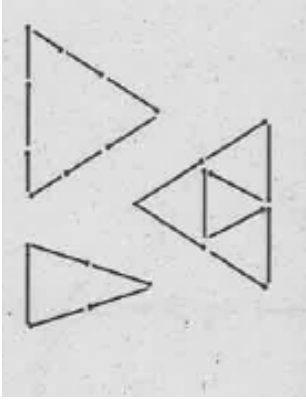
85. Try to construct triangles using match sticks. Some are shown here. Can you make a triangle with (c) 5 matchsticks?



(Remember you have to use all the available 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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86. Try to construct triangles using match sticks. Some are shown here. Can you make a triangle with (d) 6 matchsticks?



(Remember you have to use all the available 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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87. Say True or False : (a) Each angle of a rectangle is a right angle.

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88. Say True or False : (b) The opposite sides of a rectangle are equal in length.



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89. Say True or False : (c) The diagonals of a square are perpendicular to one another.

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90. Say True or False : (d) All the sides of a rhombus are of equal length.

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91. Say True or False : (e) All the sides of a parallelogram are of equal length.

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92. Say True or False : (f) The opposite sides of a trapezium are parallel.

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93. Give reasons for the following : (a) A square can be thought of as a special rectangle.

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94. Give reasons for the following : (b) A rectangle can be thought of as a special parallelogram.

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95. Give reasons for the following : (c) A Square can be thought of as a special rhombus.

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96. Give reasons for the following : (d) Square, rectangles, parallelograms are all quadrilaterals.

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97. Give reasons for the following : (e) Square is also a parallelogram.

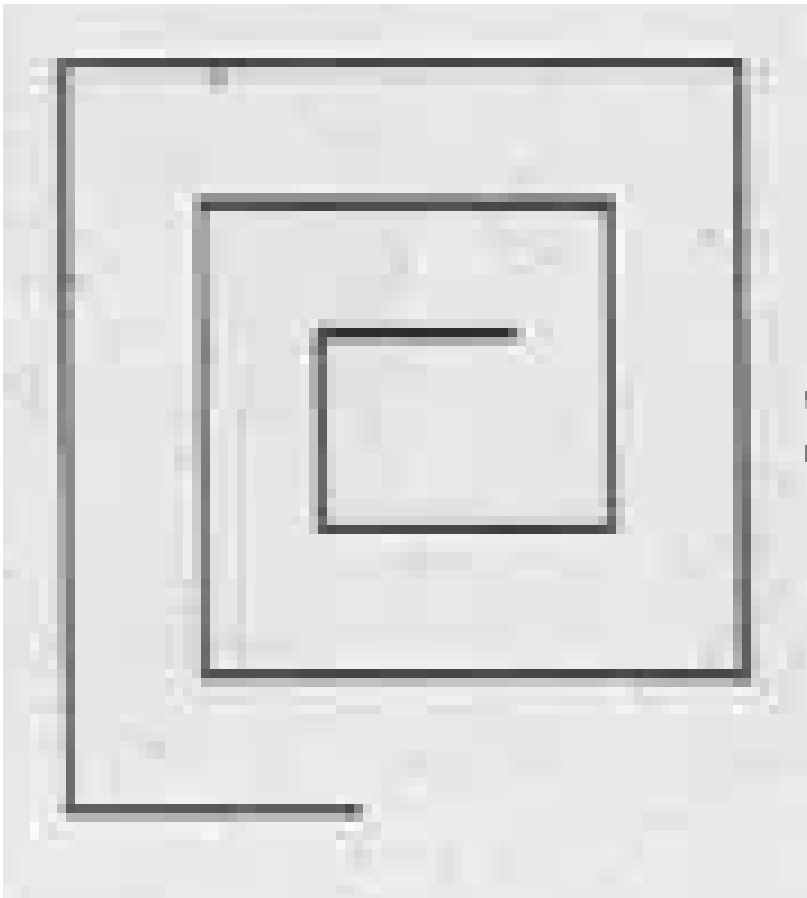
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98. A figure is said to be regular if its sides are equal in length and angles are equal in measure. Can you identify the regular

quadrilateral?

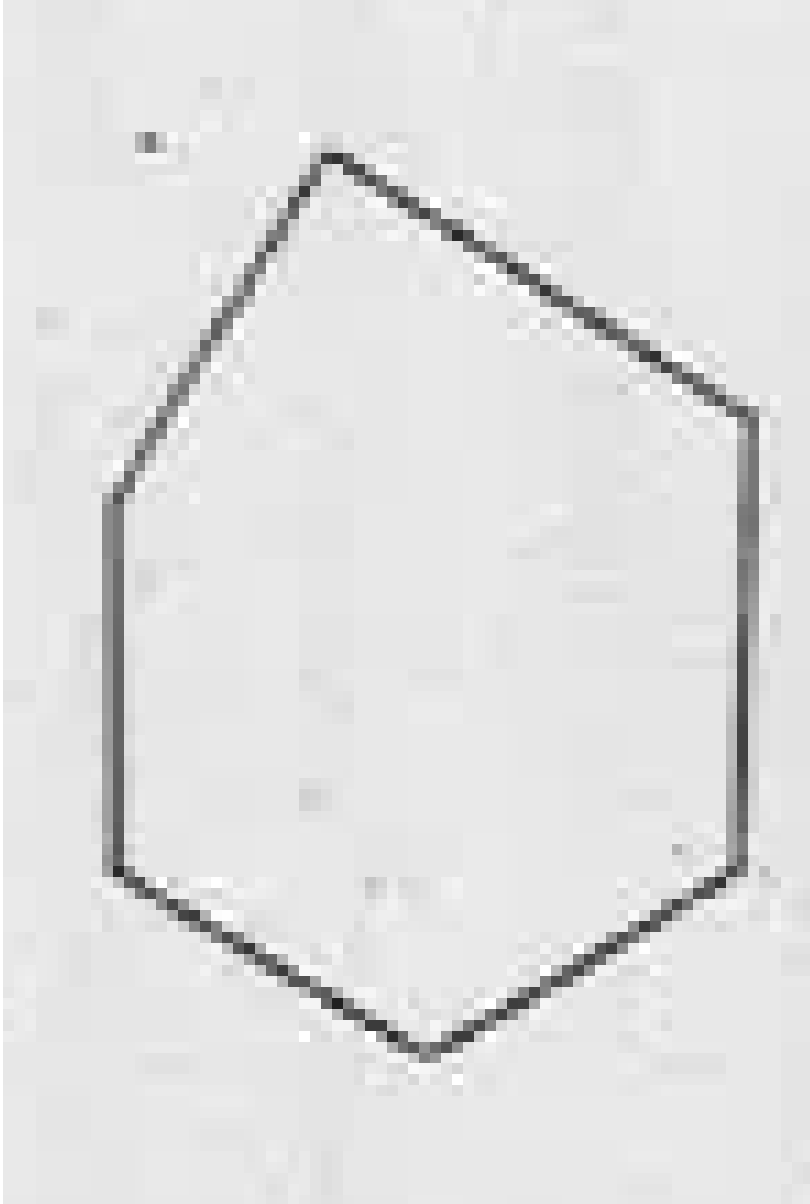
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99. Examine whether the following are polygons. If any one among them is not, say why? (a)



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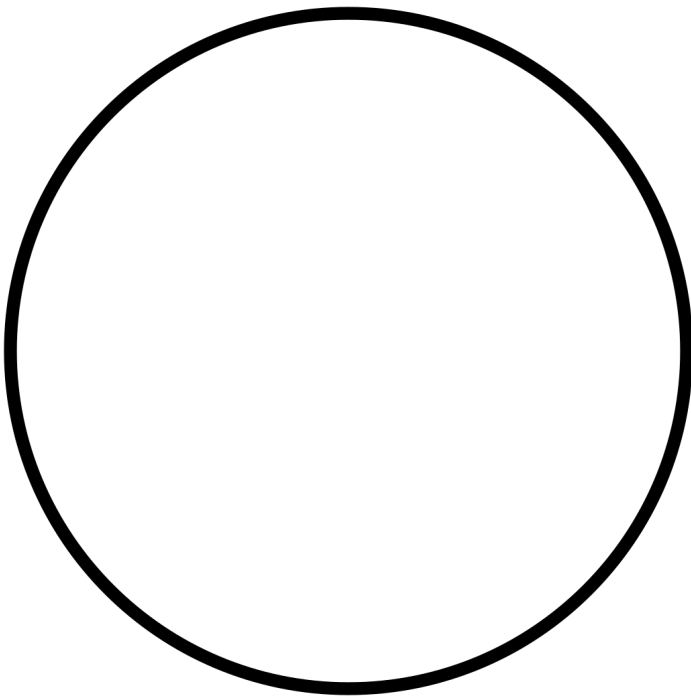
100. Examine whether the following are polygons. If any one among them is not, say why? (b)





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101. Examine whether the following are polygons. If any one among them is not, say why? (c)



A.

B.

C.

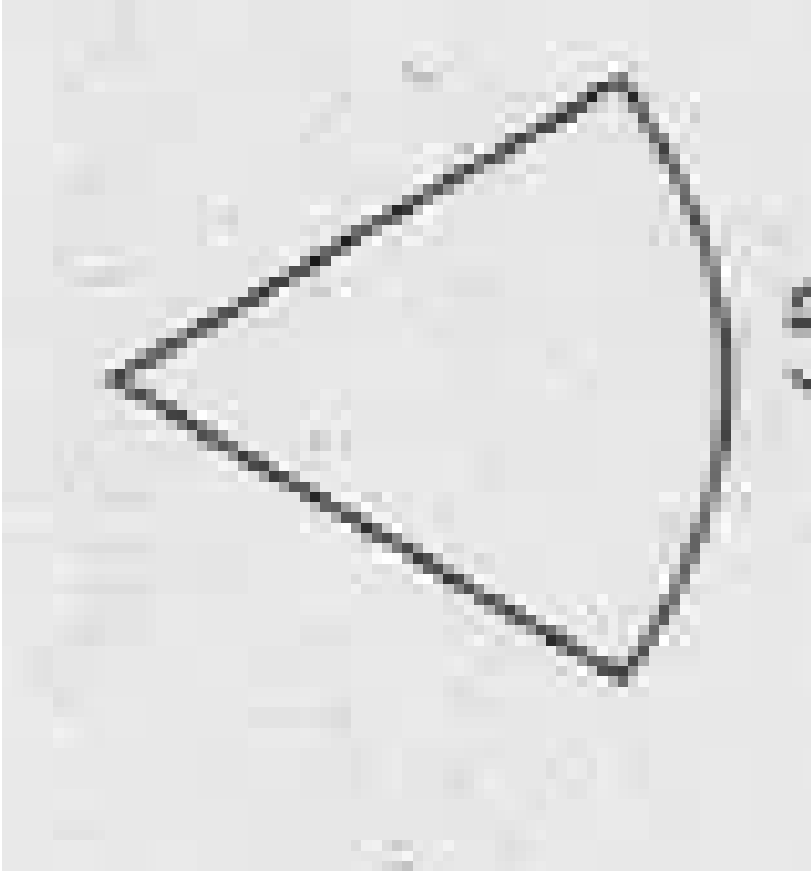
D.

Answer:



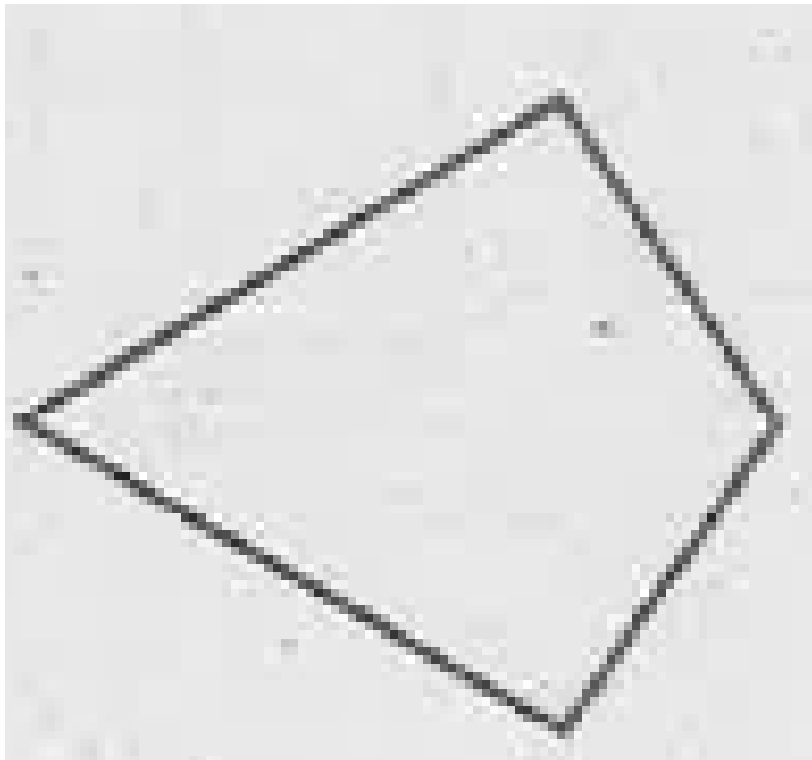
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102. Examine whether the following are polygons. If any one among them is not, say why? (d)



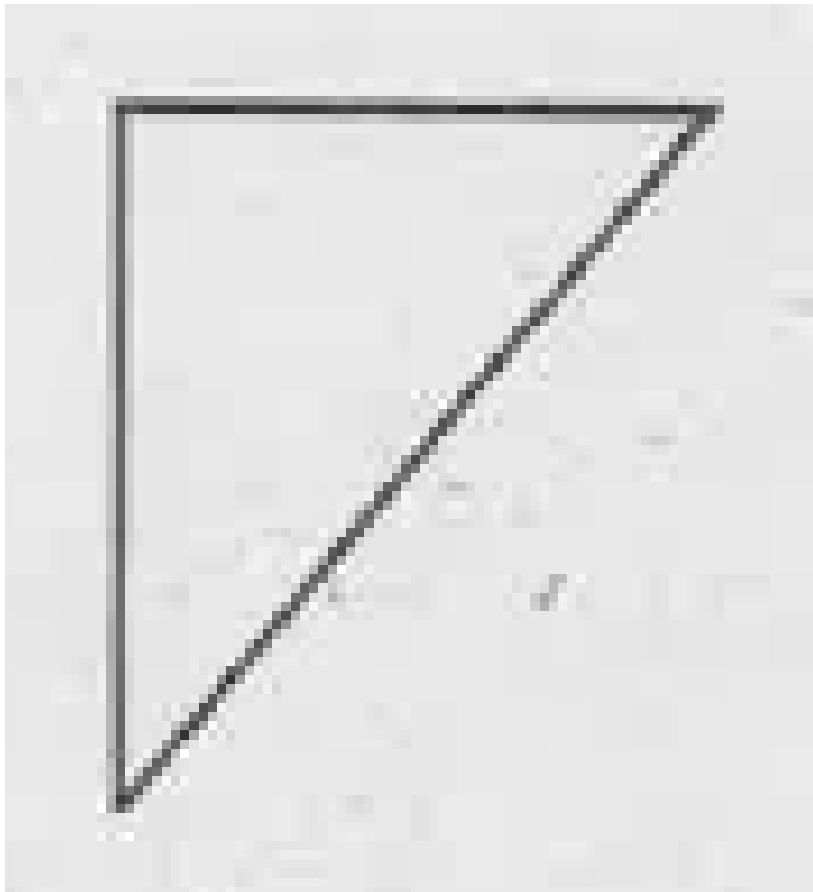
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103. Name each Polygon, (a)



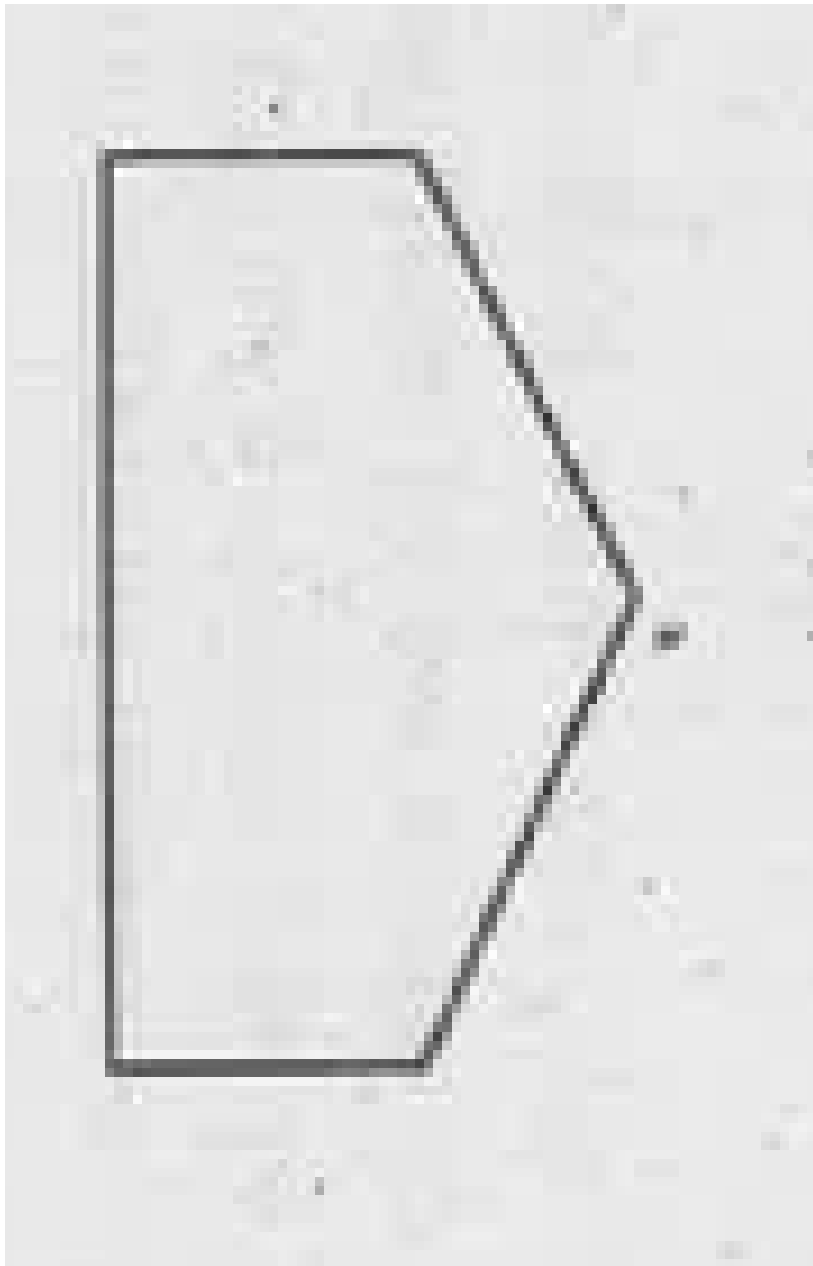
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104. Name each Polygon, (b)



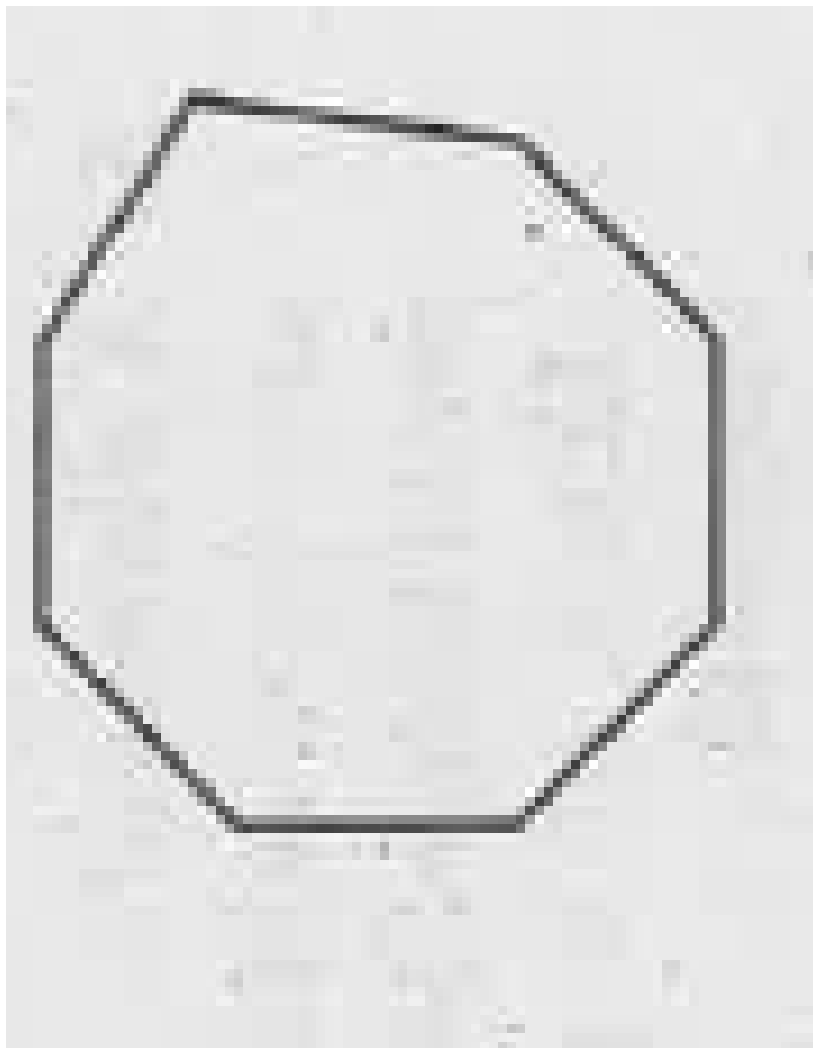
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105. Name each Polygon, (c)



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106. Name each Polygon, (d)



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107. 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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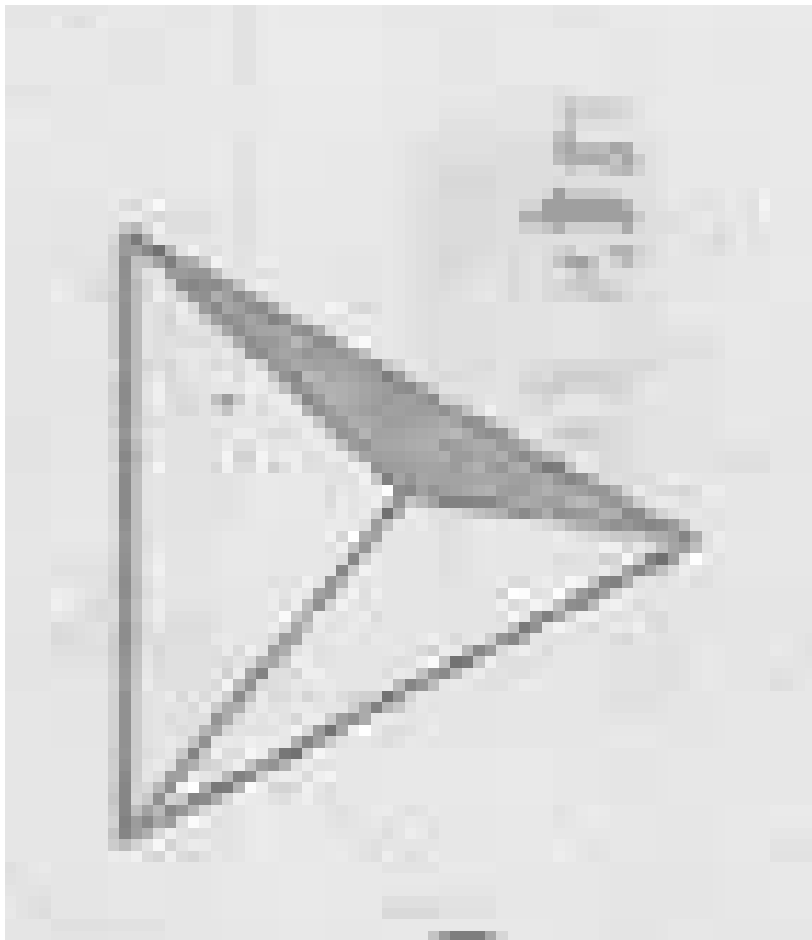
108. Draw a rough sketch of a regular octagon. (Use squared paper if you wish). Draw a rectangle by joining exactly four of the vertices of the octagon.

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109. 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.

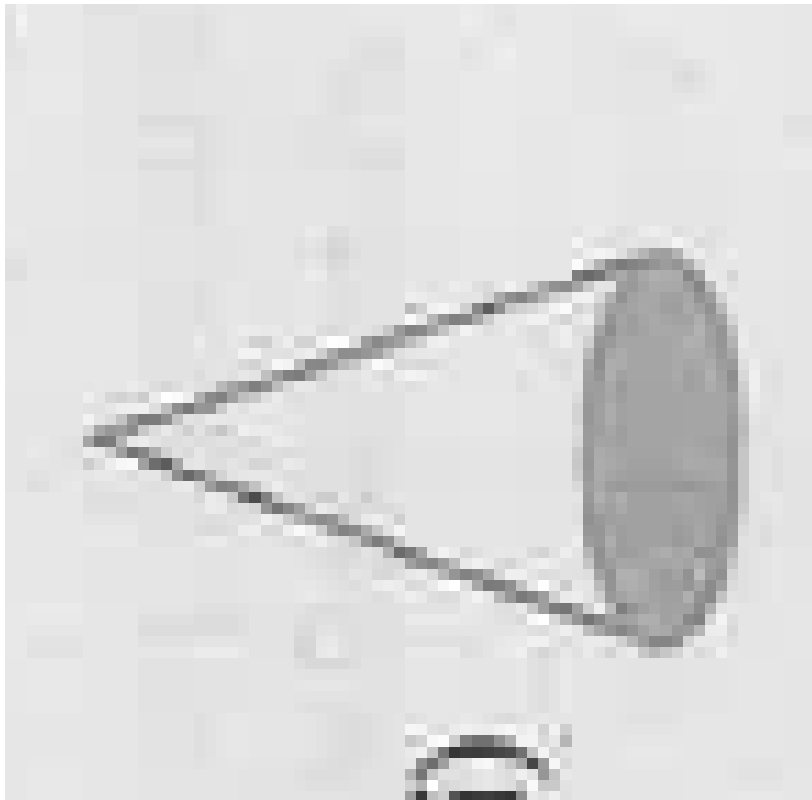
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110. Match the following : (a)(i)



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111. Match the following : (b)(ii)



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113. Match the following : (d)(iv)



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114. What shape is (a) Your instrument box?

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115. What shape is (b) A brick?

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116. What shape is (c) A match box?

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117. What shape is (d) A road-roller?

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118. What shape is (e) A sweet laddu?

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Example

1. Give two new examples of each shape. Cone

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2. Give two new examples of each shape. Sphere :

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3. Give two new examples of each shape. Cylinder

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4. Give two new examples of each shape. Cuboid : Books, Match box

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5. Give two new examples of each shape. Pyramid : Tower, Egypt

Pyramid



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