**JNV**

**MODEL QUESTIONS**

**MATHEMATICS: 11 CONSTRUCTION**

**Class : X**

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| 1 | Construct a triangle ABC in which BC = 8 cm, C:\fake\image1.pngB = 45° and C:\fake\image2.pngC = 30°. Construct another triangle similar to ΔABC such that its sides are C:\fake\image3.pngof the corresponding sides of ΔABC. | 2 |
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|  | ANS:   |  |  | | --- | --- | | Steps of Construction: (i) Draw a line segment BC = 8 cm. (ii) C:\fake\image4.pngABC = 45° is constructed at B. (iii) C:\fake\image5.pngACB = 30° is constructed at C. (iv) Both arms when produced meet at A. (v) ΔABC is the constructed triangle. (vi) An acute angle CBX is drawn below BC. (vii) Points B1, B2, B3, B4 are taken at BX, such that BB1 = B1 B2 = B2B3 = B3B4. (viii) B4C is joined. (ix) B3C′ is drawn parallel to B4C meeting BC at C′. (x) C′A′ is drawn parallel to CA, meeting BA at A′. (xi) Then ΔA′BC′ is the required triangle similar to ΔABC where each side is C:\fake\image6.pngof the side of ΔABC. | C:\fake\image7.png | |  |
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| 2 | Construct a triangle with sides 4 cm, 5 cm and 6 cm and then another triangle whose sides are C:\fake\image8.pngof the corresponding sides of the first triangle. | 2 |
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|  | ANS:   |  |  | | --- | --- | | Steps of Construction: (i) Draw ∆ABC with BC = 6 cm, AC = 5 cm and AB = 4 cm. (ii) Draw a ray BX so that it makes an acute angle with BC on the opposite side of the vertex A. (iii) Locate 8 points on BX as B1, B2, ....., B8 such that BB1 = B1B2 = ..... = B7B8. (iv) Join B5C and draw a line through B8 parallel to B5C to intersect BC produced at C′. (v) Draw a line C′A′ parallel to CA to intersect BA produced at A′. A′BC′ is the required triangle. | C:\fake\image9.png | |  |
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| 3 | Draw a circle of radius 3 cm. From a point 5 cm away from its centre, construct the pair of tangents to the circle and measure their lengths. | 3 |
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|  | ANS:   |  |  | | --- | --- | | Steps of Construction: (i) Draw a circle with centre O and radius 3 cm. (ii) Take a point A at a distance of 5 cm from O. (iii) Join OA. (iv) Draw perpendicular bisector of OA intersecting at P. (v) With P as centre and OP as radius. (vi) Draw a circle intersecting the previous circle at B and C. (vii) Join AB and AC. (viii) AB and AC are required tangents. Length of tangent = 4 cm. | C:\fake\image10.png | |  |
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| 4 | Draw a circle of radius 4 cm. Take two points P and Q on one of its extended diameter each at a distance of 6 cm from its centre. Draw tangents to the circle from these two points P and Q. | 3 |
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|  | ANS:   |  |  | | --- | --- | | Steps of Construction: (i) Draw a circle of radius 4 cm with O as its centre. (ii) Draw AB as diameter of the circle. (iii) Take P and Q as two points on extended diameter AB such that OP = OQ = 6 cm. (iv) Draw perpendicular bisector of OP and OQ intersecting OP and OQ at M and N respectively. (v) With M as centre and OM as radius draw a circle intersecting the 1st circle at T and S. (vi) With N as centre and QN as radius intersecting the 1st circle at D and E. (vii) Join PT, PS, QD and QE. (viii) PT, PS, QD and QE are required tangents. |  | |  |
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