Class 10 Mathematics · Chapter 6: Triangles

Worksheet · 20 marks · about 40 minutes · based on NCERT

Name _____ Class and section _____ Date _____

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1. A photograph 10 cm × 15 cm is enlarged to a print 20 cm × 30 cm. The photograph and the enlarged print are [1]

(a) congruent and similar
(b) similar but not congruent
(c) congruent but not similar
(d) neither congruent nor similar

2. Which of the following statements is always true? [1]

(a) Any two similar triangles are congruent.
(b) Any two congruent triangles are similar.
(c) Any two triangles with equal perimeters are similar.
(d) Any two triangles with equal areas are congruent.

3. On a map of a town, 1 cm stands for 500 m. The map and the town are similar figures, with representative fraction [1]

(a) $\frac{1}{500}$
(b) $\frac{1}{500000}$
(c) $\frac{1}{5000}$
(d) $\frac{1}{50000}$

4. In ΔABC, $\angle A = 52°$ and $\angle B = 71°$. In ΔXYZ, $\angle X = 52°$ and $\angle Y = 57°$. Then [1]

(a) $\Delta ABC \sim \Delta XYZ$
(b) the triangles are not similar
(c) $\Delta ABC \sim \Delta YXZ$
(d) $\Delta ABC \sim \Delta XZY$

5. Which pair of figures is NOT necessarily similar? [1]

(a) two rhombuses, each of side 5 cm
(b) two circles of radii 2 cm and 7 cm
(c) two right-angled isosceles triangles
(d) two regular hexagons of sides 2 cm and 5 cm

6. D and E lie on sides AB and AC of ΔABC with AD = x cm, DB = (x + 3) cm, AE = (x + 2) cm and EC = (x + 8) cm. Find x for which $DE \parallel BC$. [2]

7. A rectangle measures 8 cm by 12 cm. A parallelogram has sides 4 cm and 6 cm and one angle of 60°. Are the two figures similar? Give a reason. [2]

8. ΔDEF is right-angled at E with DF = 17 cm and DE = 8 cm. ΔLMN is right-angled at M with LN = 25.5 cm and LM = 12 cm. Show that the triangles are similar and find MN. [2]

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9. In ΔPQR, S lies on PQ and T on PR such that PS·PQ = PT·PR. PS = 4 cm, PQ = 15 cm, PT = 5 cm and PR = 12 cm. (i) Prove that ΔPST ~ ΔPRQ. (ii) If QR = 10.5 cm, find ST. [3]

10. In ΔABC, P and Q lie on AB and AC with AP = 3.6 cm, PB = 5.4 cm, AQ = 2.4 cm and QC = 3.6 cm. (i) Show that PQ ∥ BC. (ii) If BC = 7.5 cm, find PQ. [3]

11. In ΔABC, AB = AC. Points D and E lie on AB and AC such that AD = AE. Prove that DE ∥ BC. [3]

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