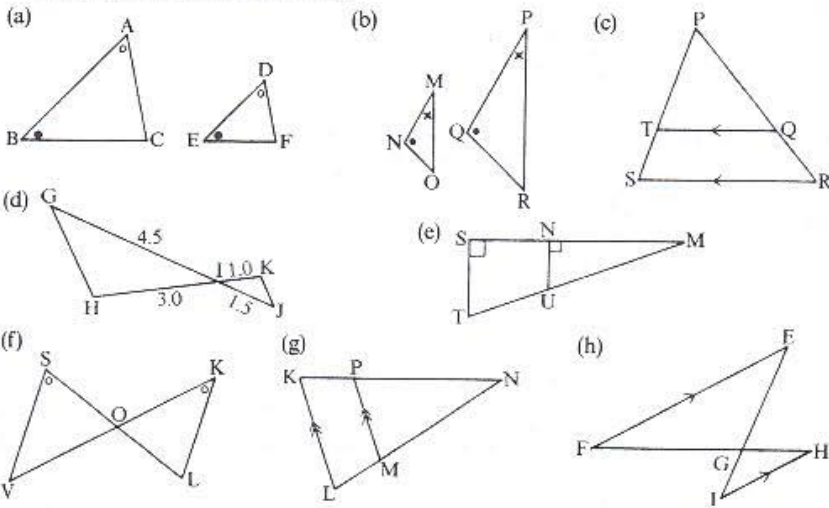


Similar Triangles

12.1 Exercise

A Remember: Sketch a diagram and record the given information.

1 Which triangles are similar? Why?



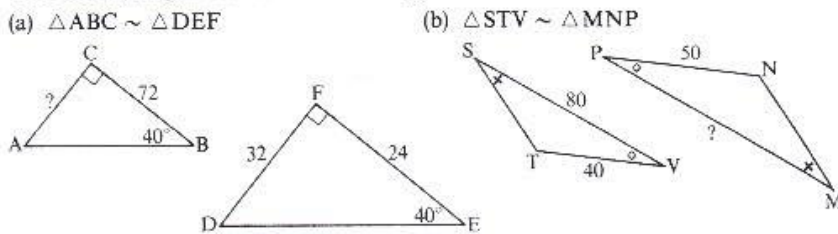
2 Complete the following.

- (a) If $\triangle PQR \sim \triangle ABC$ then (i) side PQ is proportional to ?
 (ii) side QR is proportional to ?
 (iii) side RP is proportional to ?
 (b) If $\triangle DEF \sim \triangle STU$ then (i) $\angle D = ?$ (ii) $\angle E = ?$ (iii) $\angle F = ?$

3 Find the missing information.

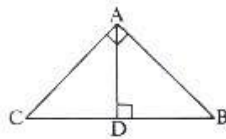
- | | |
|--|---------------|
| If you know | then you know |
| (a) $\triangle STU \sim \triangle ABC$ | ? |
| (b) $\triangle PQR \sim \triangle VWX$ | ? |

4 Find the missing measures in each triangle.



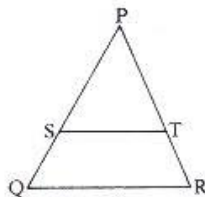
5 In $\triangle ADC$ and $\triangle BAC$, $AC = 10$, $DC = 8$, and $AD = 6$.

- (a) Why is $\triangle ADC \sim \triangle BAC$?
 (b) Find AB.
 (c) Find BC.



6 Refer to the diagram.

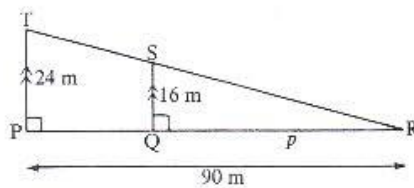
- $ST \parallel QR$, $PQ = 8$, $PS = 7$, $PT = 4$.
 (a) Which triangles are similar?
 Give reasons for your answer.
 (b) Find TR.



B Remember: To find the missing measures, you need to identify similar triangles.

7 Refer to the diagram.

- (a) Which triangles are similar?
 Give reasons for your answer.
 (b) Why is $\frac{p}{90} = \frac{16}{24}$? Find the value of p .



SOLUTIONS:

12.1 Exercise, page 439
 1.a) $\triangle ABC \sim \triangle DEF$ b) $\triangle MNO \sim \triangle PQR$ c) $\triangle POT \sim \triangle PRS$
 d) $\triangle UK \sim \triangle IGH$ e) $\triangle MNU \sim \triangle MST$ f) $\triangle OSV \sim \triangle OKL$
 g) $\triangle NPM \sim \triangle NKL$ h) $\triangle GHI \sim \triangle GFE$ 2.a) $\triangle ABC \sim \triangle DEF$
 (iii) CA b) $\angle S$ (ii) $\angle T$ (iii) $\angle U$ 3.a) $\frac{ST}{AB} = \frac{SU}{AC} = \frac{TU}{BC}$
 $\angle S = \angle A$, $\angle T = \angle B$, $\angle U = \angle C$ b) $\frac{PQ}{VW} = \frac{PR}{XW}$
 $\angle P = \angle Y$, $\angle Q = \angle X$, $\angle R = \angle W$ 4.a) $AC = 96$ b) $PM = 100$
 5.a) $AB = 7.5$ b) $BC = 12.5$ 6.a) $\triangle PST \sim \triangle PQR$ b) $TR = 7$
 7.a) $\triangle ROS \sim \triangle RPT$ b) $p = 60$ 8.a) $\triangle PRV \sim \triangle PQS$ b) $RS = 15$
 9.a) $\triangle RTS \sim \triangle RYA$ 10.a) 5 b) $m = 3.3$, $n = 4.5$
 c) $x = 35.0$, $d = 5.0$ d) $p = 40.0$, $q = 50.0$ e) 10.0
 f) $x = 4.7$, $y = 6.0$ 11. 9.8 12.a) 25.6 cm. b) 35.8 m