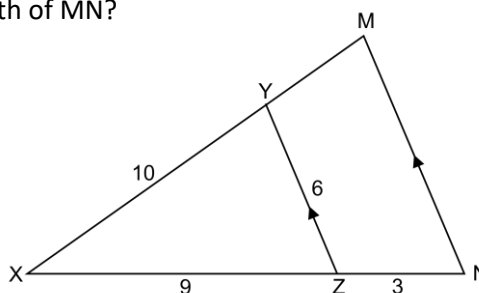


EUCLIDEAN GEOMETRY 2: QUIZ SOLUTIONS

Question 1

In the diagram, what is the length of MN?



- A. 7 B. 8 C. 9 D. 10

Solution

$\triangle XYZ$ is similar to $\triangle XMN$

$$\therefore \frac{MN}{YZ} = \frac{XN}{XZ}$$

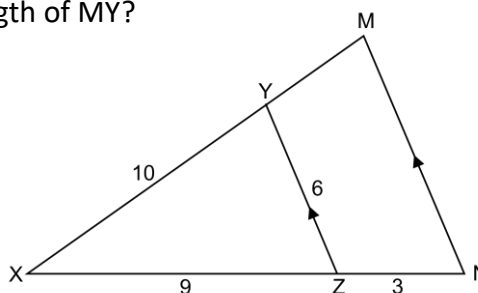
$$\text{i.e., } \frac{MN}{6} = \frac{12}{9}$$

$$\therefore MN = \frac{12}{9} \times 6 = 8$$

So, the correct answer is B.

Question 2

In the diagram, what is the length of MY?



- A. $3\frac{1}{3}$ B. 4 C. $13\frac{1}{3}$ D. 14

Solution

$\triangle XYZ$ is similar to $\triangle XMN$

$$\therefore \frac{MX}{YX} = \frac{NX}{ZX}$$

$$\text{i.e., } \frac{MX}{10} = \frac{12}{9}$$

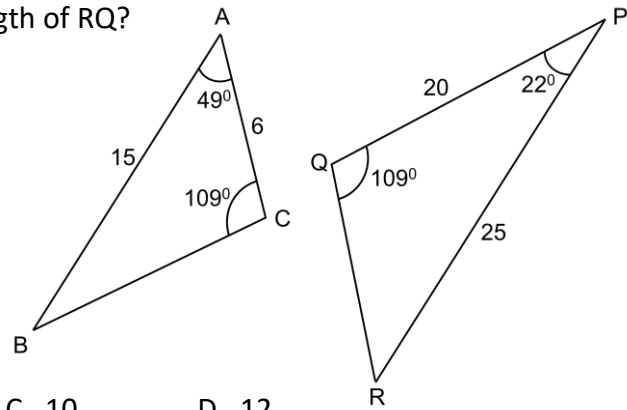
$$\therefore MX = \frac{12}{9} \times 10 = \frac{40}{3}$$

$$\therefore MX = \frac{40}{3} - 10 = \frac{10}{3}$$

So, the correct answer is A.

Question 3

In the diagram, what is the length of RQ?



A. 6

B. 8

C. 10

D. 12

Solution

$$\angle ABC = 22^\circ \text{ and } \angle PRQ = 49^\circ$$

i.e., $\triangle ABC$ is similar to $\triangle RPQ$

$$\therefore \frac{RQ}{AC} = \frac{PR}{BA}$$

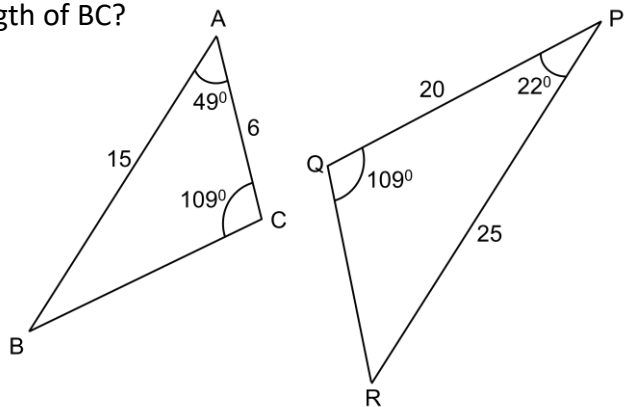
$$\text{i.e., } \frac{RQ}{6} = \frac{25}{15}$$

$$\therefore RQ = \frac{25}{15} \times 6 = 10$$

So, the correct answer is C.

Question 4

In the diagram, what is the length of BC?



A. 6

B. 8

C. 10

D. 12

Solution

From Question 3, $\triangle ABC$ is similar to $\triangle RPQ$

$$\therefore \frac{BC}{PQ} = \frac{BA}{PR}$$

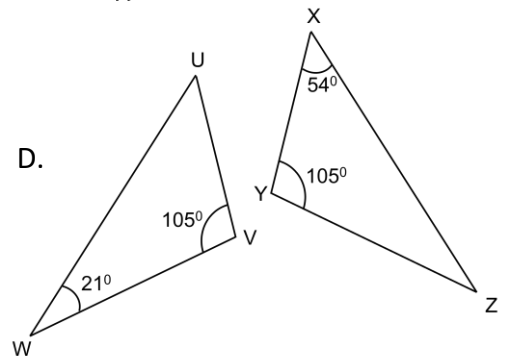
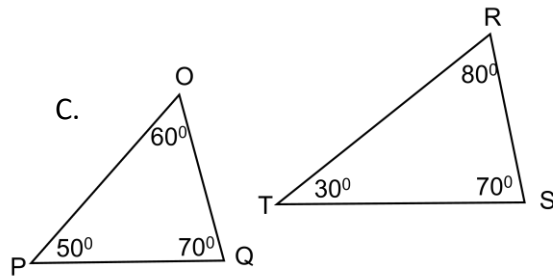
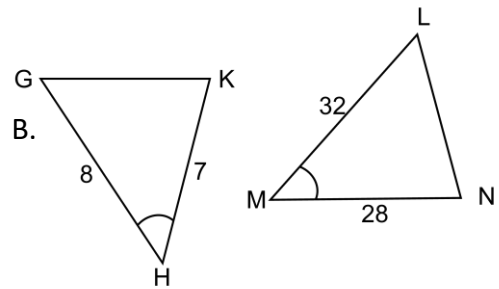
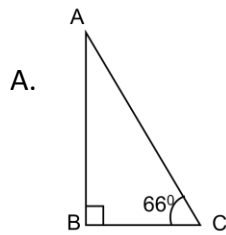
$$\text{i.e., } \frac{BC}{20} = \frac{15}{25}$$

$$\therefore BC = \frac{15}{25} \times 20 = 12$$

So, the correct answer is D.

Question 5

Which pair of triangles is *not* similar?



A. ABC and DEF

B. GHK and LMN

C. OPQ and RST

D. UVW and XYZ

Solution

In A, the triangles are similar because they are equiangular, 90° , 66° and 24° .

In B, the triangles are similar because $\angle GHK = \angle LMN$ and $\frac{GH}{LM} = \frac{KH}{NM} = \frac{1}{4}$.

In C, $\triangle OPQ$ has angles 50° , 60° and 70° ; but $\triangle RST$ has angles 30° , 70° and 80° .

This means that the triangles are not similar.

In D, the triangles are similar because they are equiangular, 21° , 54° and 105° .

So, the correct answer is C.