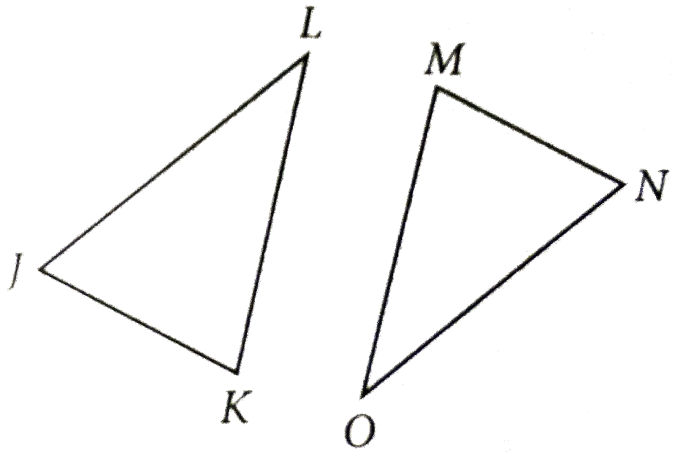
MATHS

BOOKS - KAPLAN INC MATHS (ENGLISH)

SIMILARITY, CONGRUENCE, AND PROOFS

Multiple Choice Question



1.

In the diagram above, $\overline{JL} = \overline{ON}$ and $\overline{KL} = \overline{OM}$. Confirmation of which of the following facts would be sufficient to prove that the two triangles are congruent?

A. $\angle L = \angle O$

B. $\angle K = \angle M$

C. $\angle J = \angle M$

D. $\angle J = \angle N$

Answer: A

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2. While working on a gerometry problem Raul determines that the angles of one triangle are congruent to the corresponding angles of

another triangle. Which of the following is valid deduction that Raul can make?

A. The two triangles are congruent but not necessarily similar.

B. The two triangles are similar but not necessarily congruent.

C. The two triangles are both similar and congruent.

D. The two triangle are neither similar nor congruent.

Answer: B

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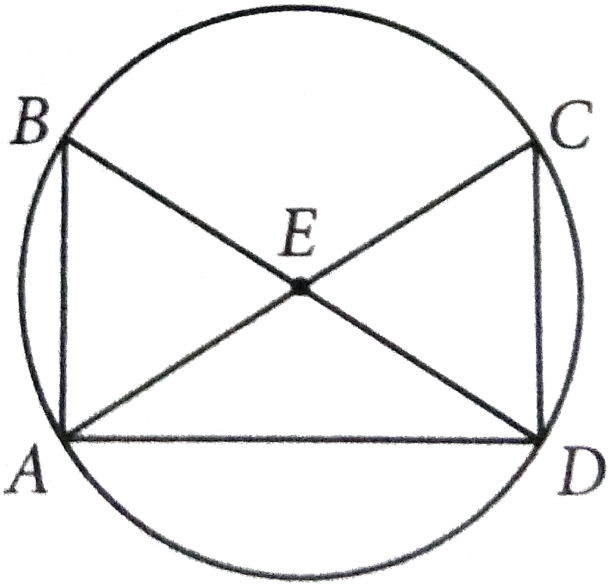

3.

$\overline{AC}$ and $\overline{BD}$ are diameters of circle E above.

Which triangle congruence theorem can be

used to prove that $\triangle AEB$ is congruent to $\triangle DEC$?

A. AAA

B. SSA

C. SAS

D.

Answer: C

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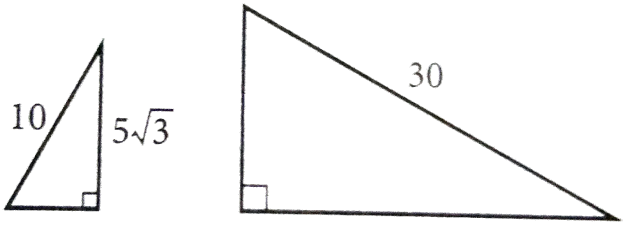

4.

If the right triangle in the figure shown are similar triangle, what is the length of the sorteer leg of the larger triangle?

A. 10

B. 15

C. $10\sqrt{3}$

D. $15\sqrt{3}$

Answer: B

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5. A triangle with side lengths of 5, 12, and 15 centimeters is similar to another triangle. The longest side of the other triangle has length 24 centimeters. What is the perimeter, in centimeters, of the triangle?

A. 38.4

B. 44

C. 51.2

D. 58

Answer: C

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6. Two triangles are graphed on a coordinate plane. Triangle MNP has vertices $M(-4, 2), N(-4, 6),$ and $P(-6, 2).$ Triangle QRS $has vertices$ Q(-5, -1), R=(-5, -5), and

S(4, -5)`. Which of the following statements is true?

A. $\triangle MNP$ is congruent to $\triangle QRS$

B. $\triangle MNP$ is similar to $\triangle QRS$

C. $\triangle MNP$ is similar to $\triangle RSQ$

D. The triangle are neither congruent nor similar.

Answer: D

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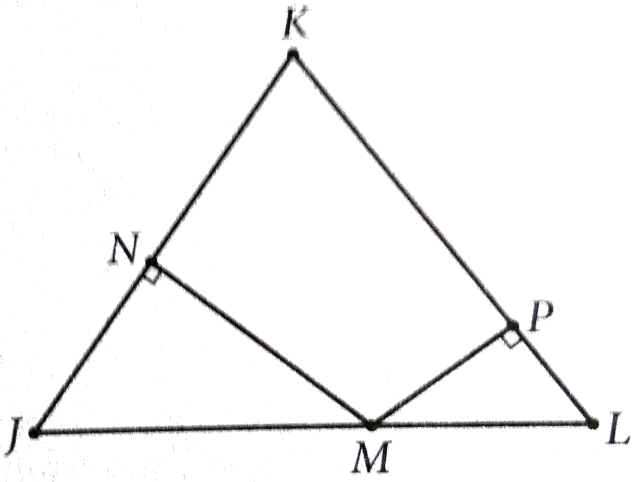

7.

In triangle JKL above, $JK = KL$ and $JL = 26$. The ratio of MN to MP is 8.5. What is the length of segment JM?

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8. Triangle CAT is an isosceles triangle with vertices $(2, 1), (6, 1), \text{ and } (4, 7)$. Triangle DOG is similar to triangle CAT, and two of its vertices are $(3, -1) \text{ and } (5, -1)$. If the third vertex has a y-coordinates that is less than -1, what is the coordinates of the third vertex?

A. $(3, -4)$

B. $(3, -5)$

C. $(4, -4)$

D. $(4, -5)$

Answer: C

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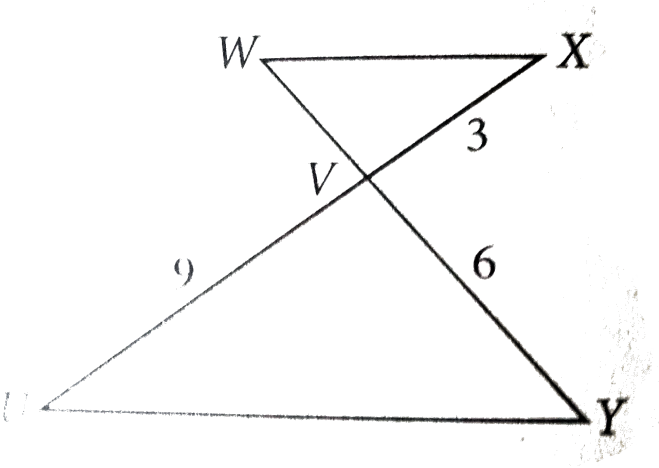
9.



In the figure above, $\overline{UY}$ and $\overline{WX}$ are parallel

and $\overline{UX}$ intersects $ovel \in e(WY)$ at V. What is the length of $\overline{WY}$?

A. 8

B. 9

C. 10

D. 12

Answer: A

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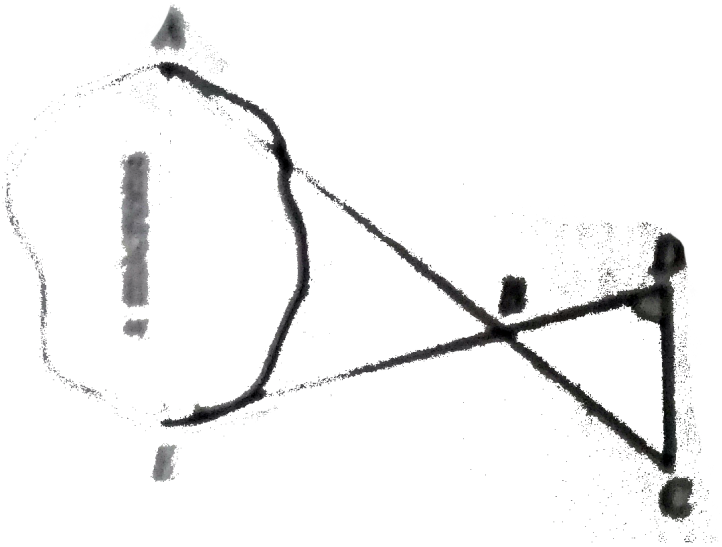
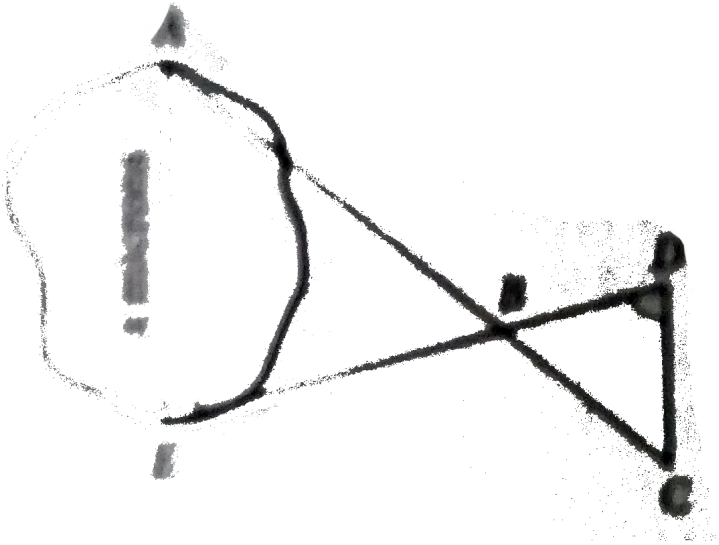


10.

A scientist looking at a sample of infected tissue through a microscope wants to find the length x, in mircos, across a damaged blood cell, as represented in the sketch above. The lengths represented by AB, EB, BD, and CD were determined to be 26 microns, 22 microns, 11 microns, and 12 microns, respectively. Given

that the measure of $\angle AEB$ is equal to the measure of $\angle CDB$, what is the value of x?



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