1. The conditional statement "all 45° angles are acute angles" is true. Based on the conditional statement, which of the following can be concluded from the additional statement "the measure of $\angle A$ is 45"?

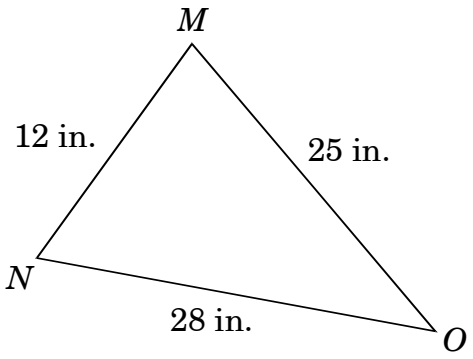
   A The complement of $\angle A$ is not an acute angle.

   B The supplement of $\angle A$ is not an acute angle.

   C $\angle A$ is an acute angle.

   D $\angle A$ is not an acute angle.

2. $\triangle MNO$ is shown below.



   Which statement about this triangle is true?

   A $m\angle O > m\angle M$

   B $m\angle M > m\angle N$

   C $m\angle M < m\angle N$

   D $m\angle N < m\angle O$

3. What is the contrapositive of the statement below?

   If a triangle is isosceles, then it has two congruent sides.

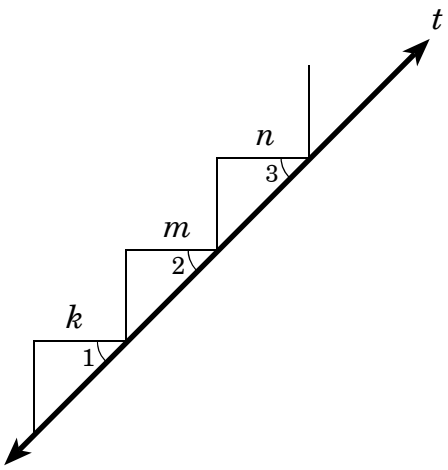
   A If a triangle does not have two congruent sides, then it is not isosceles.

   B If a triangle is isosceles, then it does not have two congruent sides.

   C If a triangle has two congruent sides, then it is isosceles.

   D If a triangle is not isosceles, then it does not have two congruent sides.

4. Given: $k \| m \| n$



Which statement justifies the conclusion that $\angle 1 \cong \angle 2 \cong \angle 3$?

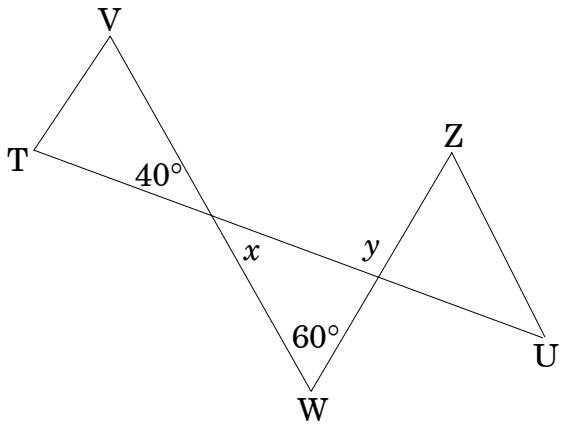
A If $k \| m \| n$ and are cut by transversal t, then alternate interior angles are congruent.

B If $k \| m \| n$ and are cut by transversal t, then vertical angles are congruent.

C If $k \| m \| n$ and are cut by transversal t, then alternate exterior angles are congruent.

D If $k \| m \| n$ and are cut by transversal t, then corresponding angles are congruent.

5. In the drawing, what is the measure of angle y?



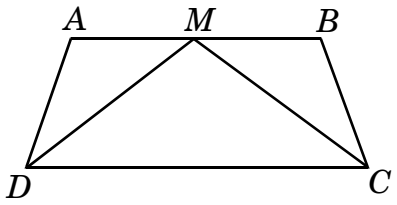
A 40°

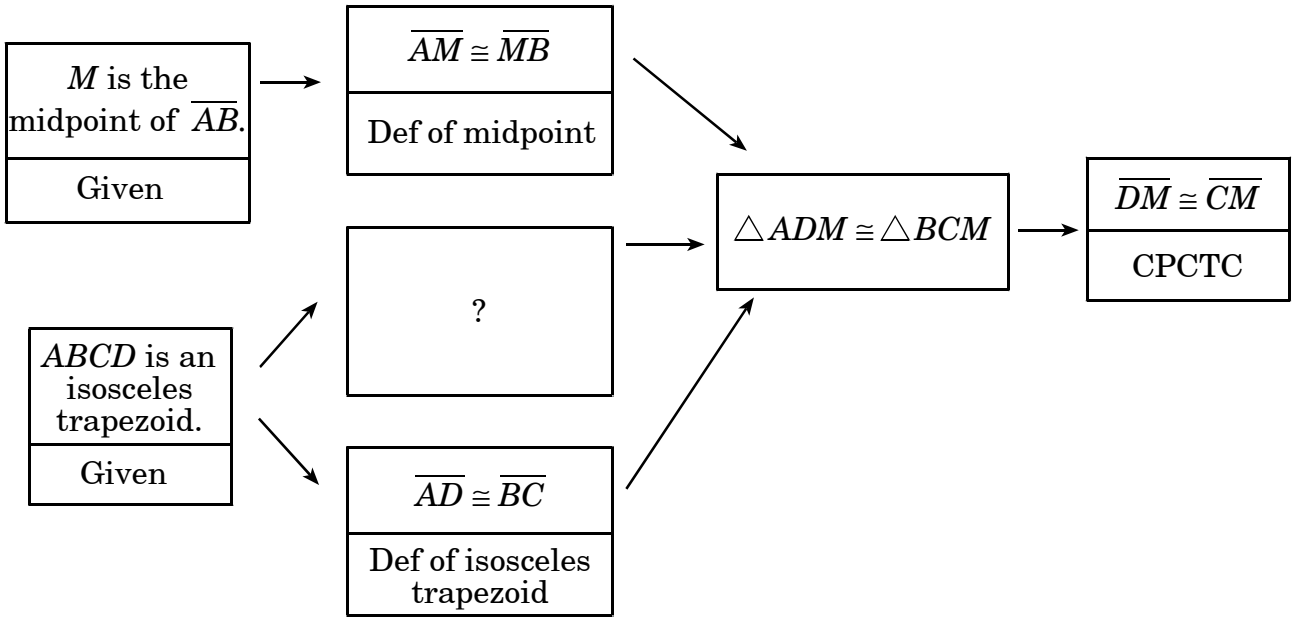
B 60°

C 80°

D 100°

6. Given: $ABCD$ is an isosceles trapezoid. M is the midpoint of $\overline{AB}$.
Prove: $\overline{DM} \cong \overline{CM}$





What is the missing statement and reason that completes the proof shown above?

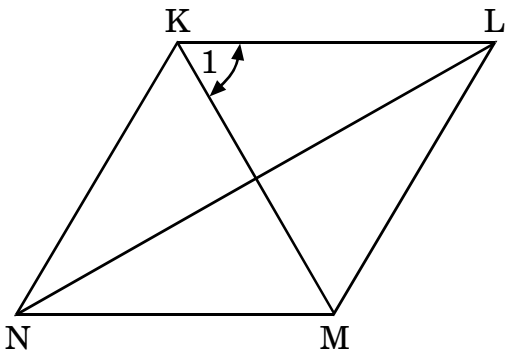
A $\overline{AD} \cong \overline{BC}$; the legs of an isosceles trapezoid are congruent.

B $\angle MAD \cong \angle MBC$; the base angles of an isosceles trapezoid are congruent.

C $\overline{AM} \cong \overline{BM}$; the corresponding parts of congruent triangles are congruent.

D $\angle ABC \cong \angle DAB$; if lines are parallel, interior angles on the same side of a transversal are supplementary.

7. If *KLMN* is a rhombus, and $m\angle KLM = 80$, what is the measure of $\angle 1$?



A 40°

B 50°

C 80°

D 90°

8. The measure of each exterior angle of a regular polygon is 45°. How many sides does the polygon have?

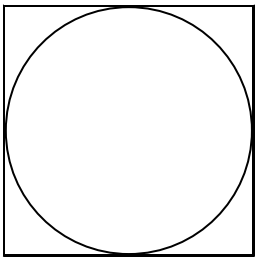
A 4

B 5

C 8

D 9

9. A gardener wants to enclose a circular garden with a square fence, as shown below.



If the circumference of the circular garden is about 48 feet, which of the following is the ***best*** estimate for the length of fencing needed?

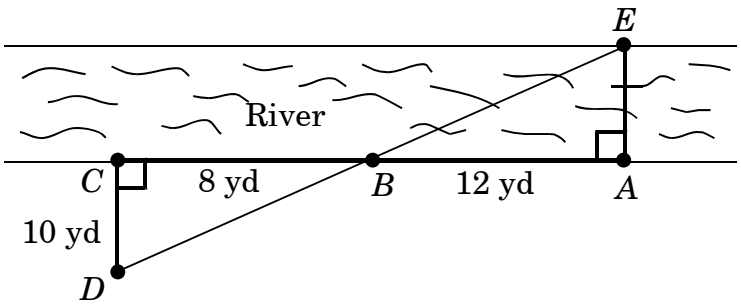
A 31 ft

B 61 ft

C 122 ft

D 244 ft

10. Jill wants to measure the width of a river. She marks distances as shown in the diagram.



Using this information, what is the ***approximate*** width of the river?

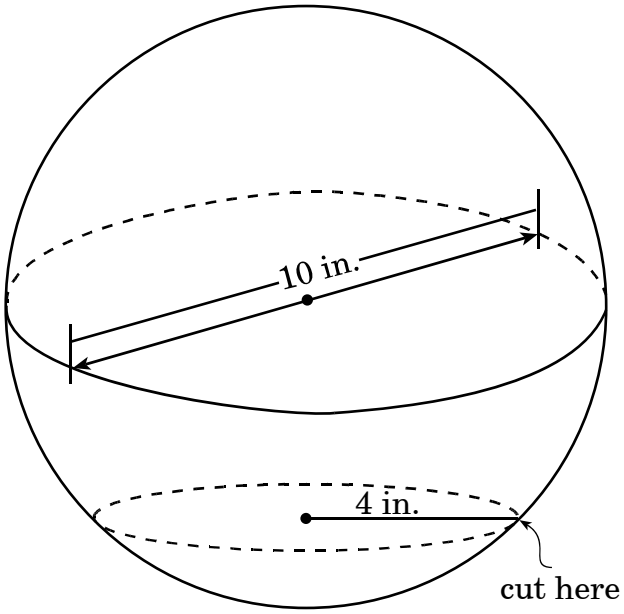
A 6.6 yards

B 10 yards

C 12.8 yards

D 15 yards

11. A spherical foam ball, 10 inches in diameter, is used to make a tabletop decoration for a party. To make the decoration sit flat on the table, a horizontal slice is removed from the bottom of the ball, as shown below.



If the radius of the flat surface formed by the cut is 4 inches, what is the height of the decoration?

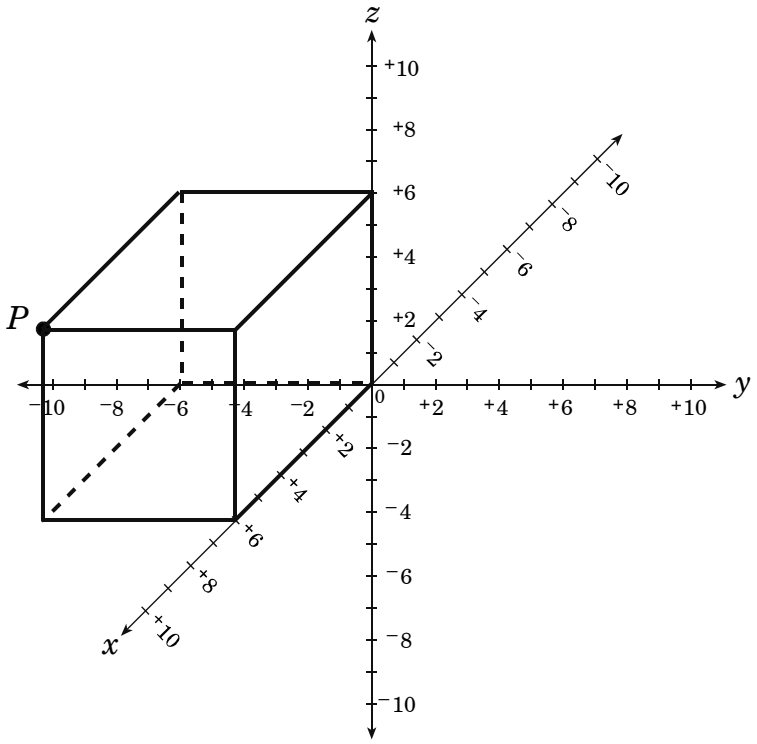
A 10 in.

B 8 in.

C 6 in.

D 4 in.

12. In the picture below, what are the coordinates of P?



A $(0, 6, 6)$

B $(^{-}6, 0, 6)$

C $(^{-}6, 6, 0)$

D $(6, ^{-}6, 6)$

13. What is the ***approximate*** surface area of a regular tetrahedron with edge length 12 cm?

A 166.3 sq cm

B 187.1 sq cm

C 249.4 sq cm

D 498.8 sq cm

End of Goal 2 Sample Items

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Answers to EOC Mathematics Geometry Sample Items

Goal 2

1. **Objective 2.01**
   Use logic and deductive reasoning to draw conclusions and solve problems.
   Thinking Skill: Analyzing **Correct Answer:** C

2. **Objective 2.01**
   Use logic and deductive reasoning to draw conclusions and solve problems.
   Thinking Skill: Analyzing **Correct Answer:** B

3. **Objective 2.01**
   Use logic and deductive reasoning to draw conclusions and solve problems.
   Thinking Skill: Analyzing **Correct Answer:** A

4. **Objective 2.02**
   Apply properties, definitions, and theorems of angles and lines to solve problems and write proofs.
   Thinking Skill: Applying **Correct Answer:** D

5. **Objective 2.02**
   Apply properties, definitions, and theorems of angles and lines to solve problems and write proofs.
   Thinking Skill: Applying **Correct Answer:** D

6. **Objective 2.02**
   Apply properties, definitions, and theorems of angles and lines to solve problems and write proofs.
   Thinking Skill: Analyzing **Correct Answer:** B

7. **Objective 2.03**
   Apply properties, definitions, and theorems of two-dimensional figures to solve problems and write proofs: a) Triangles b) Quadrilaterals c) Other Polygons d) Circles
   Thinking Skill: Analyzing **Correct Answer:** B

8. **Objective 2.03**
   Apply properties, definitions, and theorems of two-dimensional figures to solve problems and write proofs: a) Triangles b) Quadrilaterals c) Other Polygons d) Circles
   Thinking Skill: Analyzing **Correct Answer:** C

Goal 2

9. Objective 2.03
Apply properties, definitions, and theorems of two-dimensional figures to solve problems and write proofs: a) Triangles b) Quadrilaterals c) Other Polygons d) Circles
Thinking Skill: Applying **Correct Answer:** B

10. Objective 2.03
Apply properties, definitions, and theorems of two-dimensional figures to solve problems and write proofs: a) Triangles b) Quadrilaterals c) Other Polygons d) Circles
Thinking Skill: Applying **Correct Answer:** D

11. Objective 2.04
Develop and apply properties of solids to solve problems.
Thinking Skill: Integrating **Correct Answer:** B

12. Objective 2.04
Develop and apply properties of solids to solve problems.
Thinking Skill: Organizing **Correct Answer:** D

13. Objective 2.04
Develop and apply properties of solids to solve problems.
Thinking Skill: Applying **Correct Answer:** C