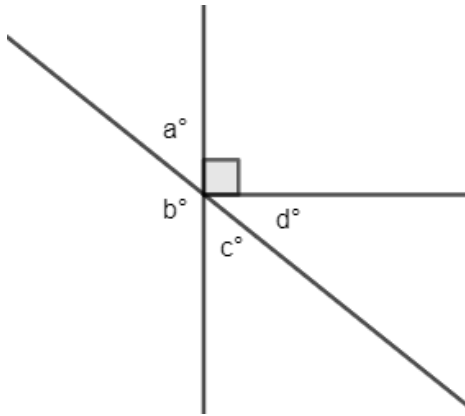


# Geometry Pre-Test

1.



Based on the figure, if  $a + c = 100$ , what is  $b + d$ ?

- A) 100
- B) 120
- C) 130
- D) 170

2.

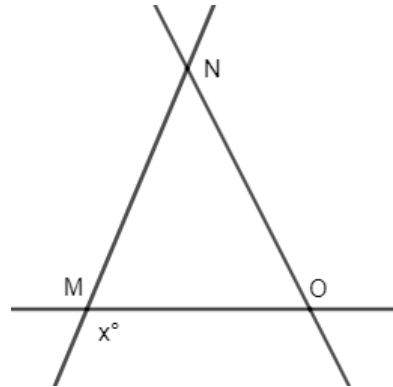


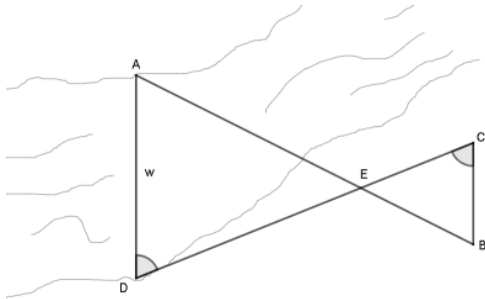
Figure not drawn to scale

The figure above shows isosceles triangle MNO with base  $\overline{MO}$ . If the measure of  $\angle MNO = 14^\circ$ , what is  $x$ ?

- A) 42
- B) 83
- C) 97
- D) 138

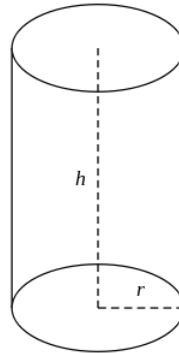
# Geometry Pre-Test

3.



An engineer is considering placing a bridge across a river from point A to point D, as represented in the sketch above. To do that she needs to know the width of the river,  $w$ . She determines that the lengths DE, EB, BC, and CE are 3000 feet, 1200 feet, 1000 feet, and 1500 feet, respectively. Segments AB and DC intersect at E and  $\angle ADE$  and  $\angle ECB$  have the same measure. What is the value of  $w$ , in feet?

4.

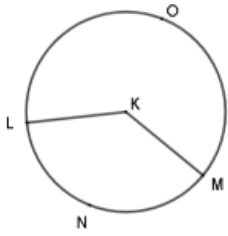


A food engineer is designing a soda can in the shape of a right circular cylinder, such as the one shown, where  $h$  represents the height and  $r$  represents the radius of the base. If the height of the soda can must be 7.5 inches and the can must hold  $15.75\pi$  in<sup>3</sup> of soda, which of the following is closest to the number inches the food engineer should make the diameter of the base?

- A) 1.5
- B) 2.5
- C) 3
- D) 6

# Geometry Pre-Test

5.

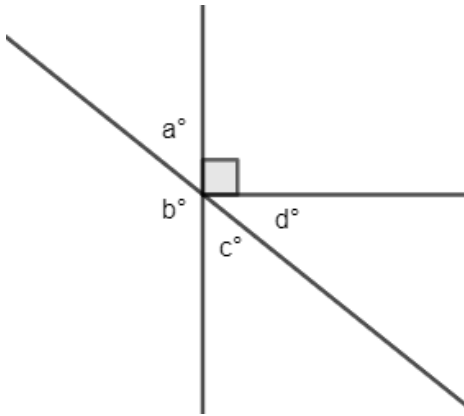


The circle above has center K. If the measure of  $\angle LKM$  is  $120^\circ$  and arc LNM has a length of  $12\pi$ , what is the length of arc LOM?

- A)  $6\pi$
- B)  $12\pi$
- C)  $24\pi$
- D)  $36\pi$

# Geometry Pre-Test

1. Answer



Based on the figure, if  $a + c = 100$ , what is  $b + d$ ?

- A) 100
- B) 120
- C) 130
- D) 170

Answer: D

Domain: 4 (Geometry and Trigonometry)

Skill: b (Lines, angles, and triangles)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 5 (Draw a diagram or table)

2. Answer

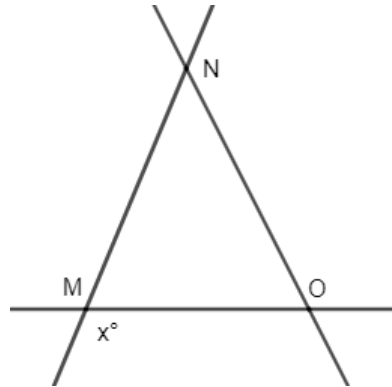


Figure not drawn to scale

The figure above shows isosceles triangle MNO with base  $\overline{MO}$ . If the measure of  $\angle MNO = 14^\circ$ , what is  $x$ ?

- A) 42
- B) 83
- C) 97
- D) 138

Answer: C

Domain: 4 (Geometry and Trigonometry)

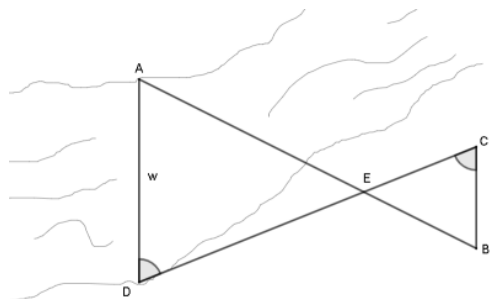
Skill: b (Lines, angles, and triangles)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 5 (Draw a diagram or table)

# Geometry Pre-Test

3. Answer



An engineer is considering placing a bridge across a river from point A to point D, as represented in the sketch above. To do that she needs to know the width of the river,  $w$ . She determines that the lengths DE, EB, BC, and CE are 3000 feet, 1200 feet, 1000 feet, and 1500 feet, respectively. Segments AB and DC intersect at E and  $\angle ADE$  and  $\angle ECB$  have the same measure. What is the value of  $w$ , in feet?

Answer: 2000

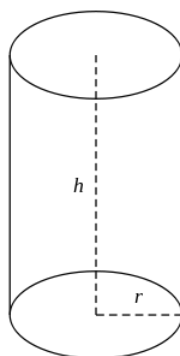
Domain: 4 (Geometry and Trigonometry)

Skill: b (Lines, angles, and triangles)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 5 (Draw a diagram or table)

4. Answer



A food engineer is designing a soda can in the shape of a right circular cylinder, such as the one shown, where  $h$  represents the height and  $r$  represents the radius of the base. If the height of the soda can must be 7.5 inches and the can must hold  $15.75\pi$  in<sup>3</sup> of soda, which of the following is closest to the number inches the food engineer should make the diameter of the base?

- A) 1.5
- B) 2.5
- C) 3
- D) 6

Answer: C

Domain: 4 (Geometry and Trigonometry)

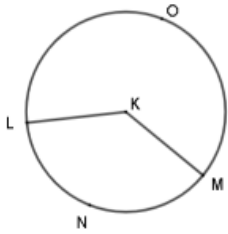
Skill: b (Lines, angles, and triangles)

Difficulty: 3 (Black Diamond / Hard)

Strategy: 5 (Draw a diagram or table)

# Geometry Pre-Test

5. Answer



The circle above has center K. If the measure of  $\angle LKM$  is  $120^\circ$  and arc LNM has a length of  $12\pi$ , what is the length of arc LOM?

- A)  $6\pi$
- B)  $12\pi$
- C)  $24\pi$
- D)  $36\pi$

Answer: C

Domain: 4 (Geometry and Trigonometry)

Skill: b (Lines, angles, and triangles)

Difficulty: 3 (Black Diamond / Hard)

Strategy: 5 (Draw a diagram or table)