ALBERTA MATH 10-3 · UNIT 4 · 25 QUESTIONS

# Similar Polygons and Trigonometry — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **Triangle ABC is similar to triangle DEF. A side of length 6 cm in triangle ABC corresponds to a side of length 15 cm in triangle DEF. The scale factor from triangle ABC to triangle DEF is**

A $\frac{5}{2}$

B $\frac{2}{5}$

C $\frac{3}{2}$

D $\frac{5}{3}$

Understand It with Pulse

Flag a mistake

2 **On a map with a scale of 1:20000, two towns are 3.5 cm apart. The actual distance between the towns is**

- A 0.07 km
- B 0.7 km
- C 7 km
- D 70 km

Understand It with Pulse | Flag a mistake

3 **A carpenter cuts a diagonal brace for a rectangular frame. The brace forms a right triangle with legs of 9 ft and 12 ft. The length of the brace is**

- A 10.5 ft
- B 21 ft
- C 15 ft
- D 225 ft

Understand It with Pulse | Flag a mistake

**4** **In triangle ABC shown, side BC has length 5 cm, side AC has length 12 cm, and side AB has length 13 cm. The value of sin A is**

- **A** $\frac{12}{13}$
- **B** $\frac{5}{12}$
- **C** $\frac{13}{5}$
- **D** $\frac{5}{13}$

Understand It with Pulse | Flag a mistake

**5** **The angle of elevation of an object, as seen from a point, is**

- **A** The angle measured upward from the horizontal to the line of sight
- **B** The angle measured downward from the horizontal to the line of sight
- **C** The angle between the line of sight and the vertical
- **D** The angle between the object and the ground

Understand It with Pulse | Flag a mistake

**6** **A 6.0 m ladder leans against a vertical wall. The ladder makes an angle of 70° with the ground. The height the ladder reaches up the wall, to the nearest tenth of a metre, is**



A 2.1 m

B 5.6 m

C 6.4 m

D 17.5 m

Understand It with Pulse | Flag a mistake

7 **A blueprint uses a scale of 1:50. A room measures 8 cm long on the blueprint. The actual length of the room is**

- A 0.4 m
- B 40 m
- C 4.0 m
- D 6.25 m

Understand It with Pulse | Flag a mistake

8 **At the same time of day, a person who is 1.8 m tall casts a shadow 2.4 m long, and a tree casts a shadow 12 m long. The height of the tree is**

- A 6.4 m
- B 7.2 m
- C 16.0 m
- D 9.0 m

Understand It with Pulse | Flag a mistake

9 **Triangle ABC is shown. Side AB has length 25 cm and side BC has length 7 cm. The length of side AC, in centimetres, is**

- A 18.0 cm
- B 24.0 cm
- C 26.0 cm
- D 17.5 cm

Understand It with Pulse | Flag a mistake

10 **In a right triangle, the side adjacent to angle θ is 12 cm and the hypotenuse is 13 cm. The measure of angle θ, to the nearest tenth of a degree, is**

- A 22.6°
- B 67.4°
- C 24.6°
- D 20.6°

Understand It with Pulse | Flag a mistake

**11** An observer stands 30 m from the base of a building on level ground. The angle of elevation of the top of the building is 50°. The height of the building, to the nearest tenth of a metre, is

- A 19.3 m
- B 23.0 m
- C 35.8 m
- D 25.2 m

Understand It with Pulse | Flag a mistake

**12** A photograph is 10 cm wide and 15 cm high. It is enlarged so that its width becomes 25 cm. The height of the enlarged photograph is

- A 20.0 cm
- B 30.0 cm
- C 40.0 cm
- D 37.5 cm

Understand It with Pulse | Flag a mistake

13 **From the top of a 45 m cliff, the angle of depression of a boat is 28°. The horizontal distance from the base of the cliff to the boat, to the nearest tenth of a metre, is**

- A 23.9 m
- B 84.6 m
- C 95.9 m
- D 39.7 m

Understand It with Pulse | Flag a mistake

14 **A rectangular garden measures 30 m by 40 m. A path runs diagonally from one corner of the garden to the opposite corner. The length of the path is**

- A 50 m
- B 70 m
- C 35 m
- D 1200 m

Understand It with Pulse | Flag a mistake

**15** In triangle ABC shown, angle A measures 27° and side BC has length 11.5 cm. The length of side AC, to the nearest tenth of a centimetre, is

- A 5.9 cm
- B 10.2 cm
- C 22.6 cm
- D 25.3 cm

Understand It with Pulse | Flag a mistake

**16** A small rectangle has a perimeter of 36 cm. It is similar to a larger rectangle, and a side of length 8 cm in the small rectangle corresponds to a side of length 12 cm in the larger rectangle. The perimeter of the larger rectangle is

- A 24 cm
- B 36 cm
- C 48 cm
- D 54 cm

Understand It with Pulse | Flag a mistake

**17** **In a right triangle, an acute angle measures 42° and the side adjacent to it is 15.0 cm. The length of the hypotenuse, to the nearest tenth of a centimetre, is**

- A 11.1 cm
- B 20.2 cm
- C 13.5 cm
- D 22.4 cm

Understand It with Pulse | Flag a mistake

**18** **A guy wire is attached to the top of a 12 m pole and anchored in the ground 9 m from the base of the pole. The angle the wire makes with the ground, to the nearest degree, is**

- A 37°
- B 41°
- C 53°
- D 49°

Understand It with Pulse | Flag a mistake

**19** **A model car is built to a scale of 1:24. The actual car is 4.8 m long. The length of the model car is**

- **A** 20 cm
- **B** 2.0 cm
- **C** 24 cm
- **D** 115.2 cm

Understand It with Pulse | Flag a mistake

**20** **In triangle ABC shown, angle A measures 35° and side AB has length 18 m. The length of side BC, to the nearest tenth of a metre, is**

- **A** 14.7 m
- **B** 12.6 m
- **C** 31.4 m
- **D** 10.3 m

Understand It with Pulse | Flag a mistake

21 **A 13 ft ladder leans against a vertical wall. The foot of the ladder is 5 ft from the base of the wall. The height the ladder reaches up the wall is**

- A 18 ft
- B 12 ft
- C 8 ft
- D 13.9 ft

Understand It with Pulse | Flag a mistake

**22** From the top of a lighthouse 35 m above the water, the angle of depression of a ship is 18°. The horizontal distance from the base of the lighthouse to the ship, to the nearest tenth of a metre, is



A 11.4 m

B 33.3 m

C 107.7 m

D 113.3 m

Understand It with Pulse | Flag a mistake

**23** **Two similar triangles have corresponding sides of length 4 cm and 10 cm. Another side of the smaller triangle has length 7 cm. The length of the corresponding side in the larger triangle is**

- A 17.5 cm
- B 2.8 cm
- C 13.0 cm
- D 28.0 cm

Understand It with Pulse | Flag a mistake

**24** **In a right triangle, the hypotenuse is 20 m and an acute angle is 40°. The length of the side adjacent to the 40° angle, to the nearest tenth of a metre, is**

- A 12.9 m
- B 16.8 m
- C 23.8 m
- D 15.3 m

Understand It with Pulse | Flag a mistake

**25** From a point on level ground 25 m from the base of a flagpole, the angle of elevation of the top of the flagpole is 41°. The observer's eyes are 1.7 m above the ground. The height of the flagpole, to the nearest tenth of a metre, is



A 21.7 m

B 23.4 m

C 18.9 m

D 28.8 m

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | A | **10.** | A | **19.** | A |
| **2.** | B | **11.** | C | **20.** | D |
| **3.** | C | **12.** | D | **21.** | B |
| **4.** | D | **13.** | B | **22.** | C |
| **5.** | A | **14.** | A | **23.** | A |
| **6.** | B | **15.** | C | **24.** | D |
| **7.** | C | **16.** | D | **25.** | B |
| **8.** | D | **17.** | B | | |
| **9.** | B | **18.** | C | | |

© 2026 Brett Robbins. All Rights Reserved.