

Circles, Area, Surface Area and Volume: math test, Grade 7 – download the PDF

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 A circle

/ 3 pts

A circle has a diameter of 20 cm. Use $\pi \approx 3.14$.

- What is its radius?
- Find its circumference.
- Find its area.

2 Triangles and quadrilaterals

/ 3 pts

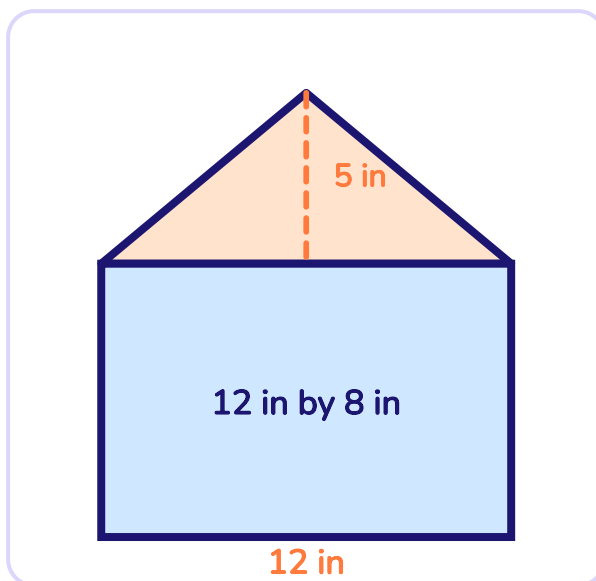
Find the area of each shape.

- A triangle with a base of 15 cm and a height of 8 cm.
- A parallelogram with a base of 12 cm and a height of 7.5 cm.
- A trapezoid with parallel sides of 11 cm and 17 cm and a height of 6 cm.

3 A composite figure

/ 4 pts

A banner is a rectangle 12 in wide and 8 in tall, with an isosceles triangle on top. The triangle has a base of 12 in (the top side of the rectangle) and a height of 5 in.



- Find the area of the rectangle.
- Find the area of the triangle.
- Find the area of the whole banner. Write a sentence.

4 A triangular prism

/ 4 pts

The bases of a right prism are right triangles with legs of 5 cm and 12 cm and a hypotenuse of 13 cm. The prism is 10 cm long.

- Find its volume.
- Find its surface area.

5 A square pyramid

/ 3 pts

A square pyramid has a base side of 12 m. The slant height of each triangular face is 10 m. Find its surface area.

6

A fish tank

/ 3 pts

A rectangular fish tank is 50 cm long, 30 cm wide and 40 cm tall. (1 L = 1,000 cm³)

- Find the volume of the tank.
- The water is 30 cm deep. Find the volume of the water.
- How many liters of water is that?

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