Practice & Problem Solving ✏️ ⏻

In 8–13, find the surface area of each prism.

8.
8 in.
8 in.
8 in.

9.
6 yd
5 yd
4 yd
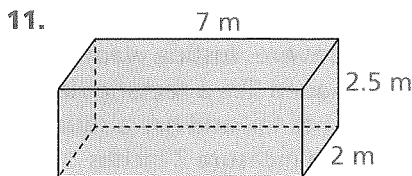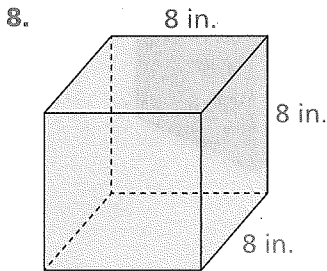3 yd

10.
15 cm
5 cm
10 cm

11.
7 m
2.5 m
2 m

12.
8 cm
8 cm
6 cm
7.2 cm   7.2 cm

13.
12 ft
12 ft
12 ft
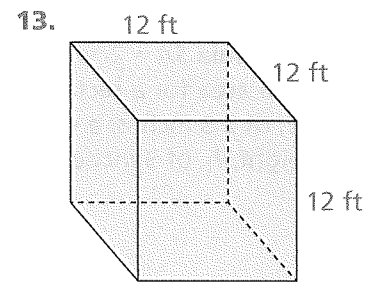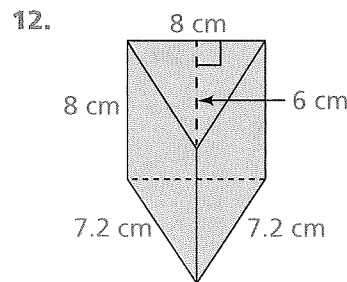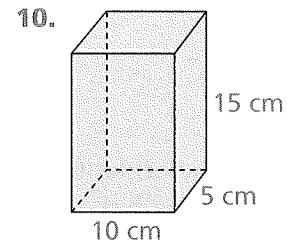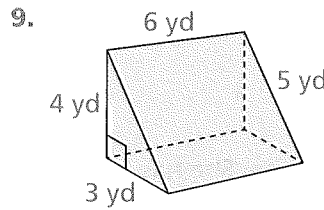
14. Critique Reasoning Jacob says that the surface area of the cube is less than 1,000 cm². Do you agree with Jacob? Explain.

10 cm
10 cm
10 cm
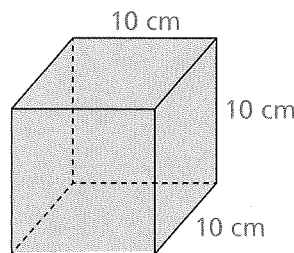
15. You want to wrap a paperweight shaped like the triangular prism shown. How many square inches of wrapping paper do you need to completely cover the prism?

4 in.
4 in.
3.5 in.
8 in.
4 in.
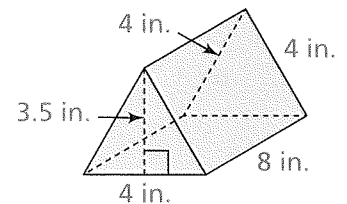
16. Sasha has 2 blocks of clay shaped like the rectangular prism below. She joins them to form a rectangular prism with a length of 12 inches. What is the surface area of the larger prism?
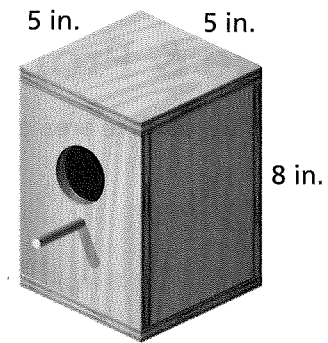
6 in.
2 in.
2 in.
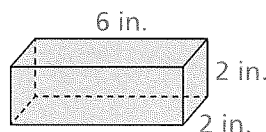
17. A rectangular prism has a length of 12 cm, a height of 6 cm, and a width of 4 cm. Use the formula $SA = 2(\ell w) + 2(wh) + 2(\ell h)$ to find the surface area of the rectangular prism.

In 18 and 19, use the diagram of the birdhouse.

18. Kali wants to build this birdhouse. She bought a 24-inch by 48-inch sheet of plywood. Does Kali have enough wood to make the birdhouse? Explain.

5 in. 5 in.

8 in.

19. **Reasoning** Kali decides to paint the birdhouse. She has a pint of paint that covers 32.5 ft² of surface. How can you tell that Kali has enough paint without calculating?

20. Use the formula $SA = 2\ell w + 2\ell h + 2wh$ to find the surface area for a rectangular prism with a length, ℓ, of 2.3 inches; a width, w, of 1.1 inches; and a height, h, of 3 inches.

21. **Make Sense and Persevere** Justine wants to wrap a shipping box shaped like a rectangular prism. The box is 28 inches tall and has a square base with sides that each measure 2 inches. How much paper will Justine use?

22. **Higher Order Thinking** Margaret wants to cover a footrest in the shape of a rectangular prism with cotton fabric. The footrest is 18 inches by 12 inches by 10 inches. Margaret has 1 square yard of fabric. Can she completely cover the footrest? Explain.

23. A cube has a surface area of 486 in.². Can the length of each side of the cube be 11 in.? Explain.

✓ Assessment Practice

24. What is the surface area of a rectangular prism with a height of 2 feet, a length of 4.2 feet, and a width of 2.5 feet?

25. What is the surface area of a cube where each side has a length of 6.75 feet?

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