

ANSWER PRESENTATION TOOL

Green - Student Edition

8

Chapter Tes

1-12

ALL EVEN

Show Solu

ODD

1. The solid has 1 face on the bottom, 1 face on the top, and 6 faces on the sides. The faces intersect at 18 different line segments. The edges intersect at 12 different points. So, the solid has 8 faces, 18 edges, and 12 vertices.

2. The solid has 1 face on the bottom and 7 faces on the sides. The faces intersect at 14 different line segments. The edges intersect at 8 different points. So, the solid has 8 faces, 14 edges, and 8 vertices.

3. Use a net to find the area of each face.

$$\text{Top: } 4 \cdot 1 = 4$$

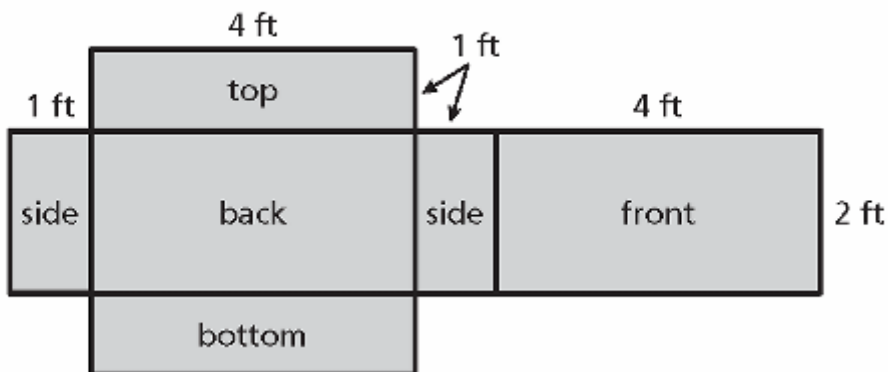
$$\text{Bottom: } 4 \cdot 1 = 4$$

$$\text{Front: } 4 \cdot 2 = 8$$

$$\text{Back: } 4 \cdot 2 = 8$$

$$\text{Side: } 1 \cdot 2 = 2$$

$$\text{Side: } 1 \cdot 2 = 2$$



Surface Area = Area of top + Area of bottom + Area of front + Area of back + Area of a side + Area of a side

$$S = 4 + 4 + 8 + 8 + 2 + 2$$

$$= 28$$

So, the surface area is 28 square feet.

4. Use a net to find the area of each face.

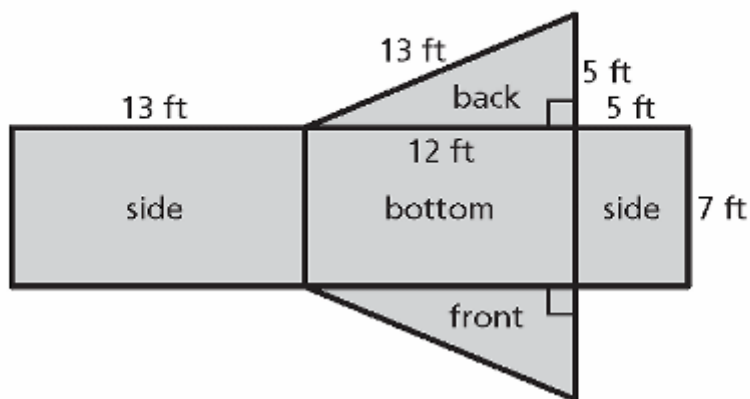
Bottom: $12 \cdot 7 = 84$

Front: $\frac{1}{2} \cdot 12 \cdot 5 = 30$

Back: $\frac{1}{2} \cdot 12 \cdot 5 = 30$

Side: $13 \cdot 7 = 91$

Side: $5 \cdot 7 = 35$



Surface Area = Area of bottom + Area of front + Area of back + Area of a side + Area of a side

$$S = 84 + 30 + 30 + 91 + 35$$

$$= 270$$

So, the surface area is 270 square feet.

5. Use a net to find the area of each face.

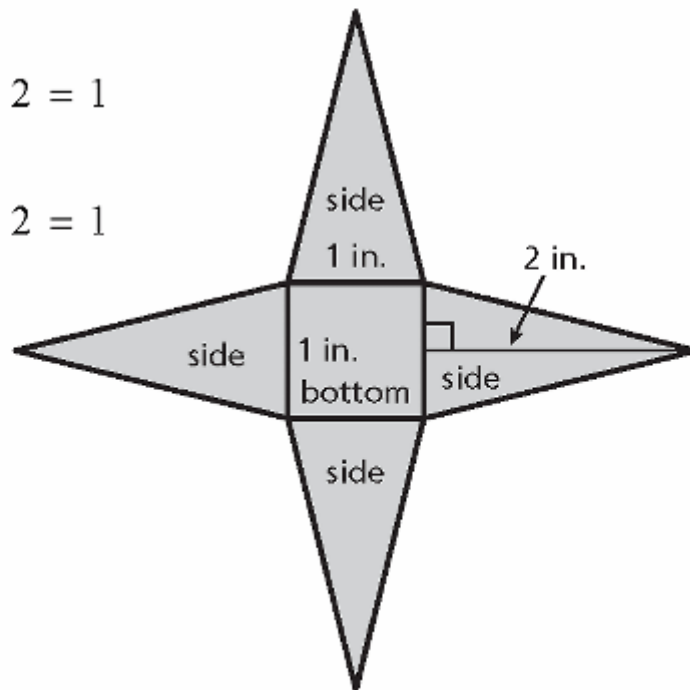
$$\text{Bottom: } 1 \cdot 1 = 1$$

$$\text{Side: } \frac{1}{2} \cdot 1 \cdot 2 = 1$$

$$\text{Side: } \frac{1}{2} \cdot 1 \cdot 2 = 1$$

$$\text{Side: } \frac{1}{2} \cdot 1 \cdot 2 = 1$$

$$\text{Side: } \frac{1}{2} \cdot 1 \cdot 2 = 1$$



Surface Area = Area of bottom + Area of a side + Area of a side + Area of a side + Area of a side

$$S = 1 + 1 + 1 + 1 + 1$$

$$= 5$$

So, the surface area is 5 square inches.

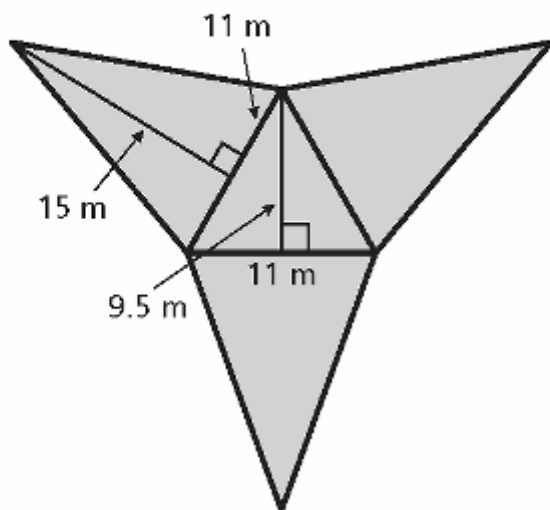
6. Use a net to find the area of each face.

$$\text{Bottom: } \frac{1}{2} \cdot 11 \cdot 9.5 = 52.25$$

$$\text{Side: } \frac{1}{2} \cdot 11 \cdot 15 = 82.5$$

$$\text{Side: } \frac{1}{2} \cdot 11 \cdot 15 = 82.5$$

$$\text{Side: } \frac{1}{2} \cdot 11 \cdot 15 = 82.5$$



Surface Area = Area of bottom + Area of a side + Area of a side + Area of a side

$$\begin{aligned} S &= 52.25 + 82.5 + 82.5 + 82.5 \\ &= 299.75 \end{aligned}$$

So, the surface area is 299.75 square meters.

$$7. V = \ell wh$$

$$= \frac{3}{2} \left(\frac{5}{4} \right) \left(\frac{7}{3} \right)$$

$$= \frac{105}{24}, \text{ or } 4\frac{3}{8}$$

So, the volume is $4\frac{3}{8}$ cubic centimeters.

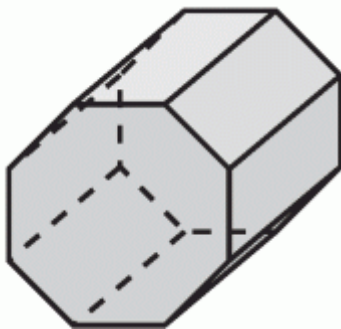
$$8. V = \ell wh$$

$$= 3\frac{1}{2} \left(1\frac{1}{3} \right) \left(2\frac{1}{4} \right)$$

$$= \frac{252}{24}, \text{ or } 10\frac{1}{2}$$

So, the volume is $10\frac{1}{2}$ cubic centimeters.

9.



10. The least amount of wrapping paper needed to wrap the boxed DVD collection is equal to the surface area of the boxed DVD collection.

Use a net to find the area of each face.

$$\text{Top: } 6 \cdot 8 = 48$$

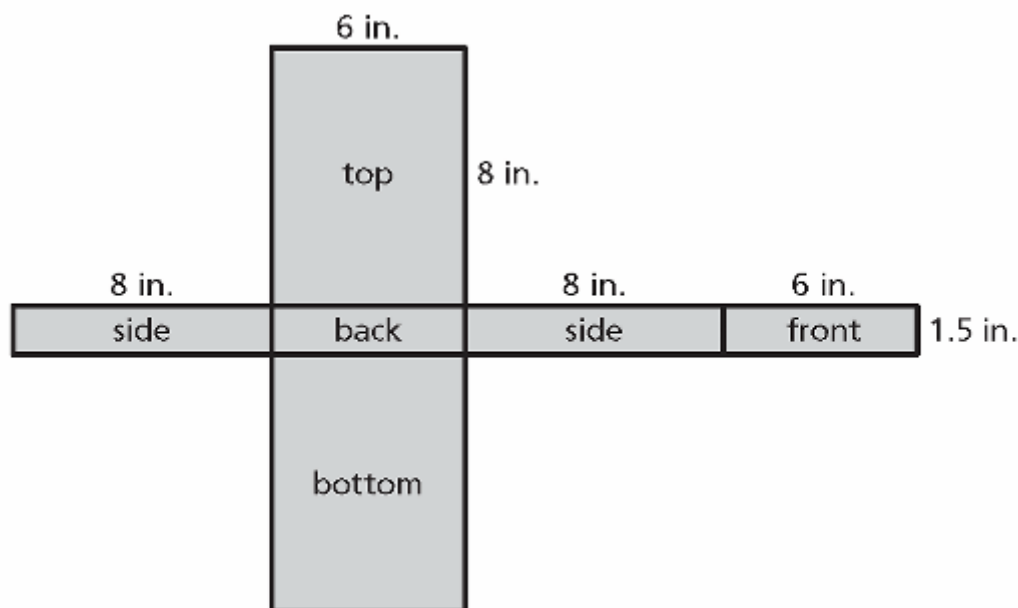
$$\text{Bottom: } 6 \cdot 8 = 48$$

$$\text{Front: } 6 \cdot 1.5 = 9$$

$$\text{Back: } 6 \cdot 1.5 = 9$$

$$\text{Side: } 8 \cdot 1.5 = 12$$

$$\text{Side: } 8 \cdot 1.5 = 12$$



Surface Area = Area of top + Area of bottom + Area of front + Area of back + Area of a side + Area of a side

$$\begin{aligned} S &= 48 + 48 + 9 + 9 + 12 + 12 \\ &= 138 \end{aligned}$$

So, the least amount of wrapping paper needed to wrap the boxed DVD collection is 138 square inches.

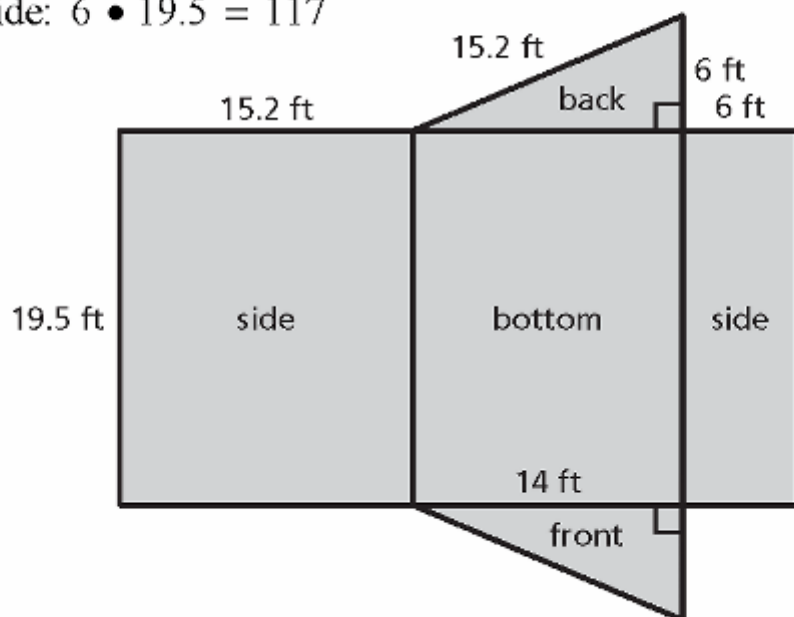
11. Use a net to find the area of each face to be painted.

$$\text{Front: } \frac{1}{2} \cdot 14 \cdot 6 = 42$$

$$\text{Back: } \frac{1}{2} \cdot 14 \cdot 6 = 42$$

$$\text{Side: } 15.2 \cdot 19.5 = 296.4$$

$$\text{Side: } 6 \cdot 19.5 = 117$$



Surface Area To Be Painted = Area of front + Area of back + Area of side + Area of side

$$\begin{aligned} S &= 42 + 42 + 296.4 + 117 \\ &= 497.4 \end{aligned}$$

So, the surface area of the part of the ramp to be painted is 497.4 square feet. Because you are going to paint the ramp with two coats, you will need enough paint to cover $2 \cdot 497.4 = 994.8$ square feet. Because one quart of paint covers 80 square feet and $994.8 \div 80 = 12.435$ quarts, you should buy 13 quarts of paint to cover the ramp.

12. Volume of original cube: $V = \ell wh$
 $= 4(4)(4)$
 $= 64$

Double the edge lengths: $4 \bullet 2 = 8$

Volume of new cube: $V = \ell wh$
 $= 8(8)(8)$
 $= 512$

So, the volume of the new cube is $512 \div 64 = 8$, or 8 times greater than the original cube.