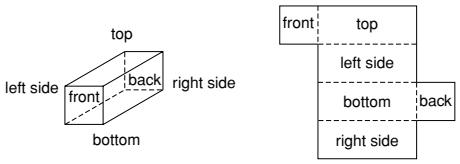
LESSON 10-4 Reading Strategies
Analyze Information

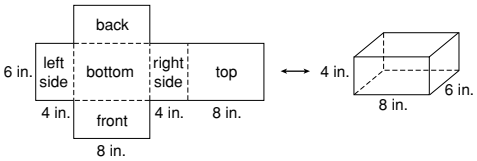
If you unfold a three-dimensional figure and lay it flat, you have made a net.



A **net** is a two-dimensional shape that lets you picture all the faces of a three-dimensional figure. A net helps you see how much surface a three-dimensional figure covers.

The **surface area** of a three-dimensional figure is the total area of all its faces.

If you analyze the net of a rectangular prism, you notice there are six faces. Each face pairs up with another, congruent face:



To find the surface area of a rectangular prism, find the sum of the areas of the six faces (rectangles). *Hint:* $A = \ell w$.

Answer the following to find the surface area of the rectangular prism.

1. What is the area of the bottom rectangle? 48 in^2
2. What is the area of the top rectangle? 48 in^2
3. What is the area of the back rectangle? 32 in^2
4. What is the area of the front rectangle? 32 in^2
5. What is the area of the right rectangle? 24 in^2
6. What is the area of the left rectangle? 24 in^2
7. What is the surface area of the rectangular prism? 208 in^2

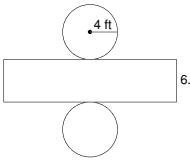
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LESSON 10-4 Puzzles, Twisters & Teasers
Bee a Math Marvel!

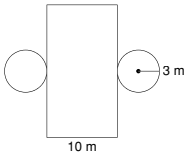


Find the surface area of each figure below. Round to the nearest tenth. Use your answers to solve the riddle.

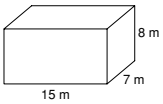
L 256.2 ft^2



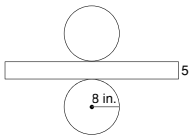
B 244.9 m^2



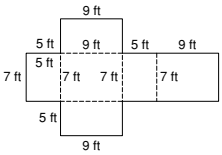
A 562 m^2



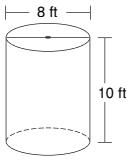
H 653.1 in^2



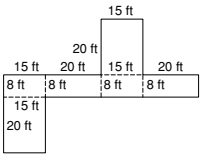
T 286 ft^2



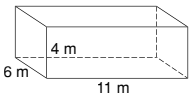
O 351.7 ft^2



S 1,160 ft^2



I 268 m^2



Why couldn't the bee go to the dance?

I	T	W	A	S	A	M	O	T	H	B	A	L	L
268	286		562	1,160	562		351.7	286	653.1	244.9	562	256.2	256.2

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LESSON 10-5 Practice A
Changing Dimensions

Two prisms are similar. The scale factor and the surface area of the smaller prism are given in Column A. Draw a line to the surface area of the larger prism in Column B.

Column A Prisms	Column B Prisms
1. scale factor: 3, surface area of the smaller prism: 9 cm^2	A 96 cm^2
2. scale factor: 4, surface area of the smaller prism: 5 cm^2	B 90 cm^2
3. scale factor: 5, surface area of the smaller prism: 4 cm^2	C 80 cm^2
4. scale factor: 2, surface area of the smaller prism: 24 cm^2	D 100 cm^2
	E 81 cm^2

Two prisms are similar. The scale factor and the volume of the smaller prism are given in Column A. Draw a line to the volume of the larger prism in Column B.

Column A Prisms	Column B Prisms
5. scale factor: 3, volume of the smaller prism: 5 ft^3	F 125 ft^3
6. scale factor: 4, volume of the smaller prism: 2 ft^3	G 128 ft^3
7. scale factor: 5, volume of the smaller prism: 1 ft^3	H 135 ft^3
8. scale factor: 2, volume of the smaller prism: 17 ft^3	I 136 ft^3
	J 144 ft^3

9. A fish tank holds 6 gallons of water. A larger, similarly shaped fish tank has a scale factor of 2. How many times more water does the larger fish tank hold than the smaller fish tank? 8 times more

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LESSON 10-5 Practice B
Changing Dimensions

Given the scale factor, find the surface area of the similar prism.

1. The scale factor of two similar rectangular prisms is 3. The surface area of the smaller prism is 15 in^2. 135 in^2
2. The scale factor of two similar triangular prisms is 2. The surface area of the smaller prism is 25 cm^2. 100 cm^2
3. The scale factor of two similar rectangular prisms is $\frac{1}{2}$. The surface area of the larger prism is 960 ft^2. 240 ft^2
4. The scale factor of two similar triangular prisms is 5. The surface area of the smaller prism is 10 m^2. 250 m^2
5. The scale factor of two similar rectangular prisms is $\frac{1}{5}$. The surface area of the larger prism is 625 in^2. 25 in^2
6. The scale factor of two similar pentagonal prisms is 4. The surface area of the smaller prism is 16 cm^2. 256 cm^2

Given the scale factor, find the volume of the similar prism.

7. The scale factor of two similar triangular prisms is 3. The volume of the smaller prism is 8 in^3. 216 in^3
8. The scale factor of two similar rectangular prisms is $\frac{1}{2}$. The volume of the larger prism is 648 m^3. 81 m^3
9. The scale factor of two similar triangular prisms is 4. The volume of the smaller prism is 10 cm^3. 640 cm^3
10. The scale factor of two similar rectangular prisms is $\frac{1}{4}$. The volume of the larger prism is 1,920 ft^3. 30 ft^3
11. The scale factor of two similar triangular prisms is 2. The volume of the smaller prism is 72 yd^3. 576 yd^3
12. A small tank weighs 24 pounds when it is full of water. A larger tank that is similar in shape has a scale factor of 3. How much does the larger tank weigh when filled with water? 648 lb

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