THIRD SPACE LEARNING

Surface Area Worksheet

Geometry

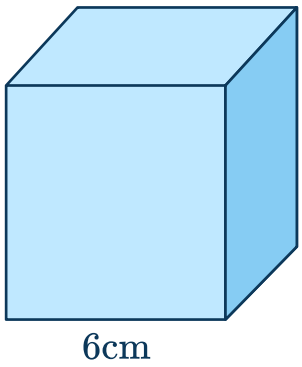
Grades 6 to 8

Skill Questions

Name: .....

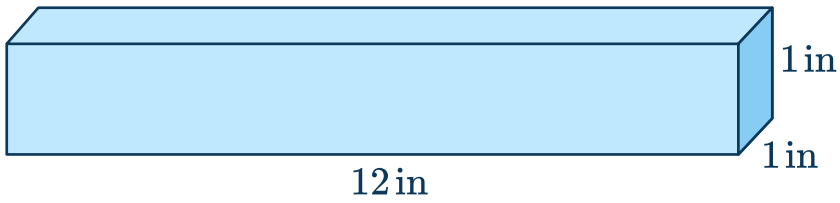
Date: .....

1 Find the surface area of the cube with side length 6 cm.



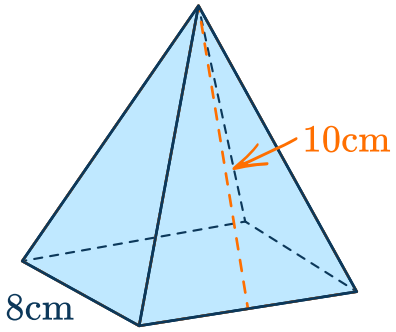
Answer

2 Find the surface area of the rectangular prism.



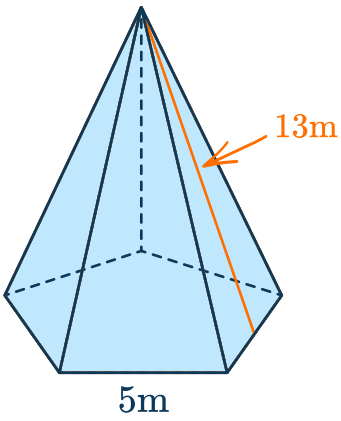
Answer

3 Find the surface area of the pyramid with the square base.



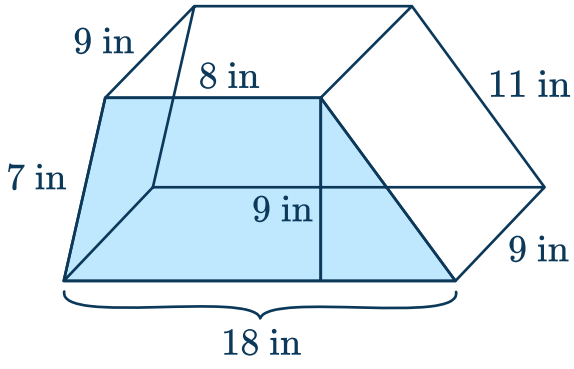
Answer

4 Find the surface area of the pentagonal pyramid where the area of the base is 65.2 m^2.



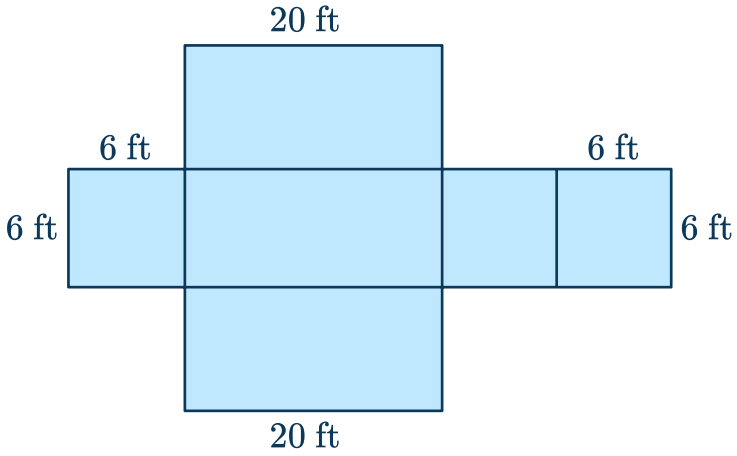
Answer

5 Find the surface area of the trapezoidal prism.



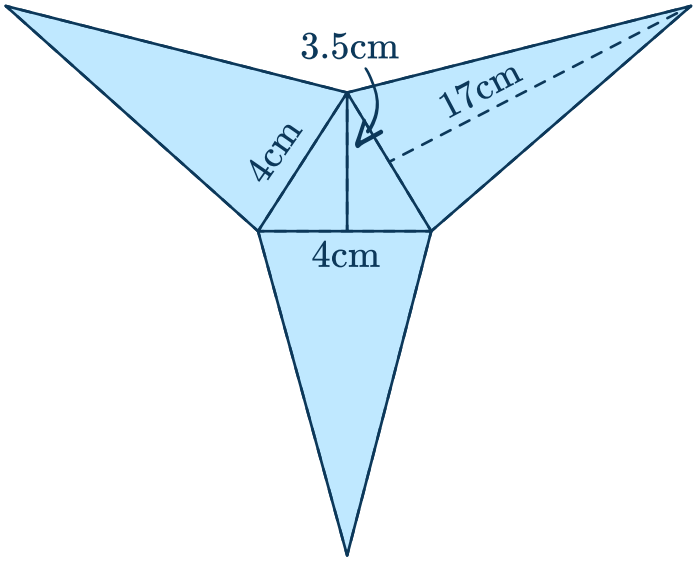
Answer

6 Here is the net of a rectangular prism. Find the surface area.



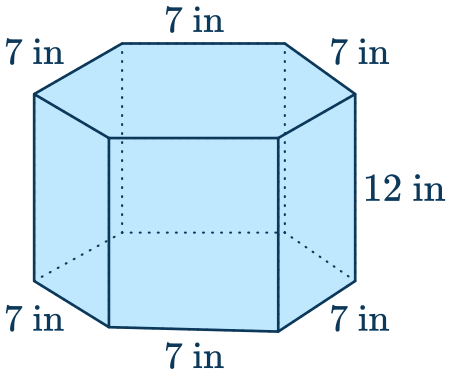
Answer

7 Here is the net of a triangular pyramid. Find the surface area.



Answer

8 Find the lateral area of the hexagonal prism.

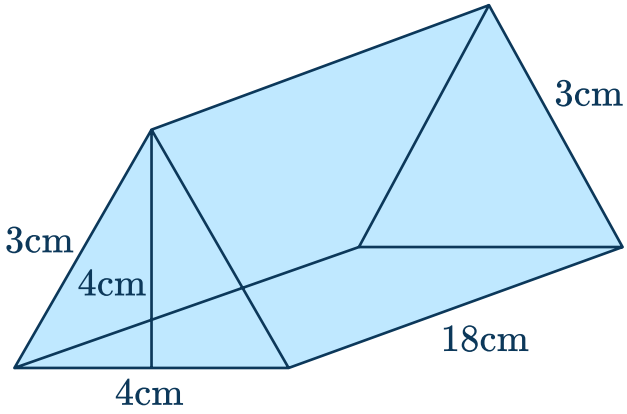


Answer

9 Find the surface area of a cube with a 1 inch edge length.

Answer

10 Find the surface area of the triangular prism.



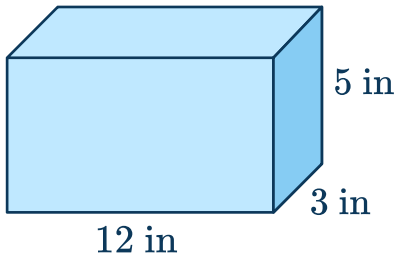
Answer

Applied Questions

11 If the surface area of a cube is 96 ft^2. Find the edge length of the cube.

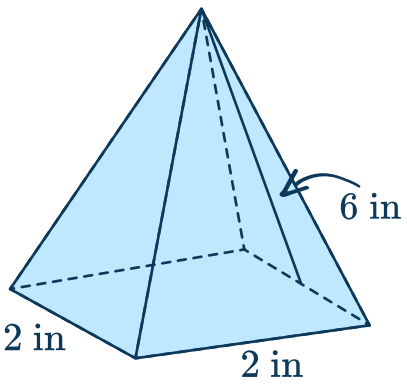
Answer

12 Damian built a wooden box with no top in woodshop. He wants to find the surface area of the wooden box in order to paint it. What is the surface area?



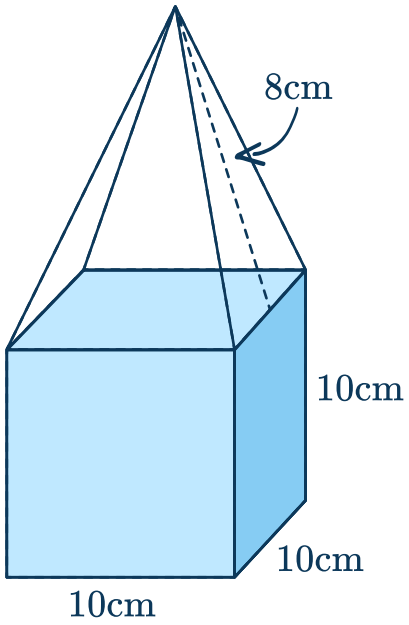
Answer

13 Stella is working on an art project for school. She created a paper mache square pyramid. If one pint of paint costs $10.24 and covers 7 square inches. How many pints does she need to buy, and how much will it cost?



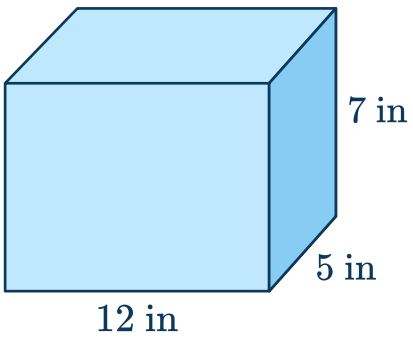
Answer

14 Find the total surface area:



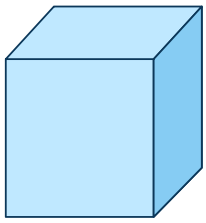
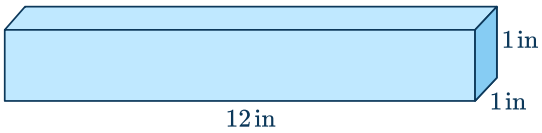
Answer

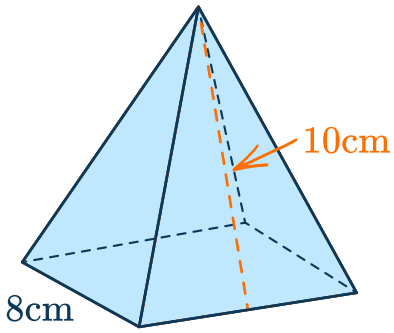
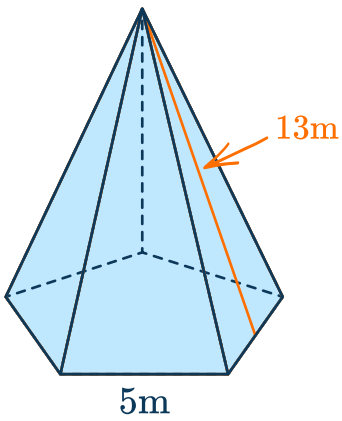
15 Will a rectangular piece of wrapping paper that is 36 inches by 20 inches be large enough to wrap a box that has the dimensions below.



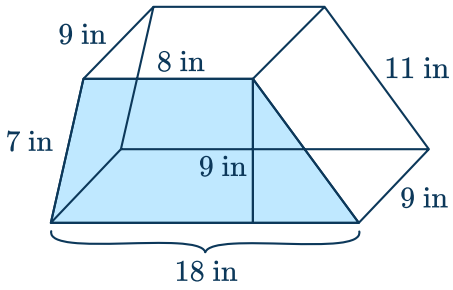
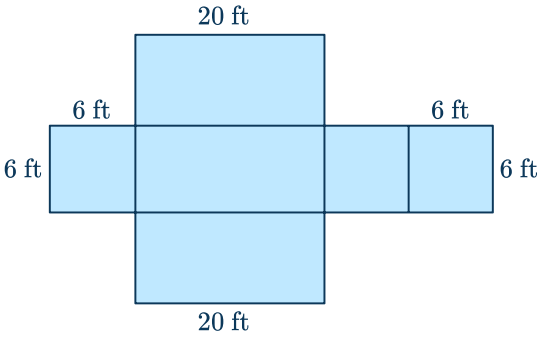
Answer

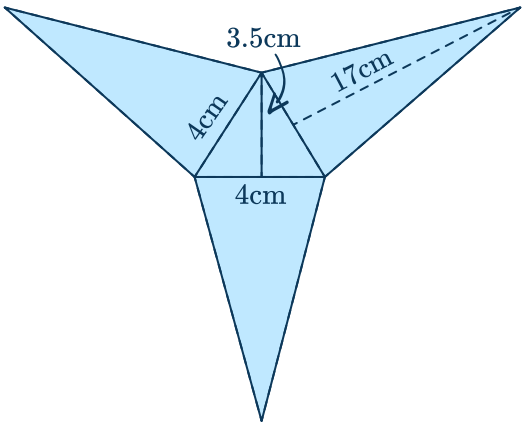
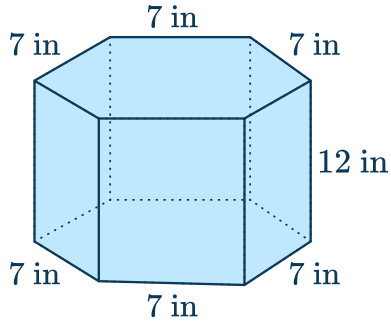
Answers

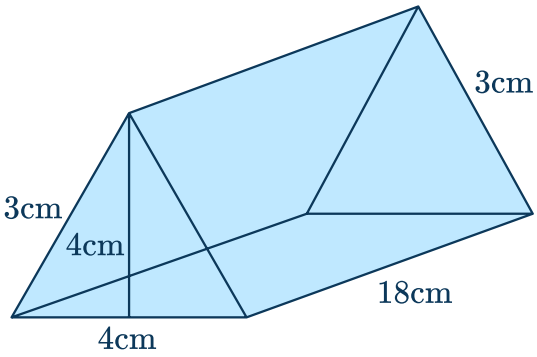
Question number	Question	Answers	Standard
1	Find the surface area of the cube with side length 6 cm.  	$Area\ of\ one\ side = 36cm^2$ There are 6 equal sides. So the surface area = $6 \times 36 = 216cm^2$	6.G.A.4
2	Find the surface area of the rectangular prism.  	$Area\ of\ the\ top: 12 \times 1 = 12$ Area of the bottom is equal to the top area so, $2 \times 12 = 24in^2$ $Area\ of\ the\ front: 12 \times 1 = 12$ Area of the back is equal to the front so, $2 \times 12 = 24in^2$ $Area\ of\ the\ right: 1 \times 1 = 1$ Area of the left is equal to the right so, $2 \times 1 = 2in^2$ Sum the areas: 24 + 24 + 2 Surface area: 50 in^2	6.G.A.4

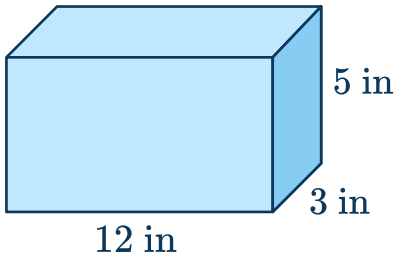
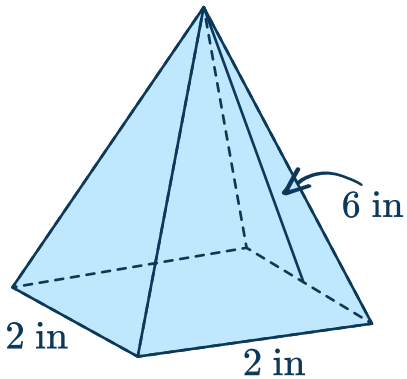
Question number	Question	Answers	Standard
3	Find the surface area of the pyramid with the square base.  	The pyramid has four equal triangular sides. The area of one of the sides is: $A = \frac{1}{2}(8)(10)$ $A = 40cm^2$ Area of all four sides: $4 \times 40 = 160cm^2$ Area of the square base: $8 \times 8 = 64cm^2$ Surface area: $160 + 64 = 224cm^2$ Surface area of pyramid: $224cm^2$	6.G.A.4
4	Find the surface area of the pentagonal pyramid where the area of the base is 65.2 m^2.  	Each of the triangular sides are equal. The area of one of the triangular sides is: $A = \frac{1}{2} \times 13 \times 5$ $A = 32.5m^2$ There are 5 sides, so the area of all of the sides is: $32.5 \times 5 = 162.5m^2$ Surface area: sum the area of the sides and the area of the base. $65.2 + 162.5 = 227.7m^2$ Surface area: 227.7 m^2	6.G.A.4

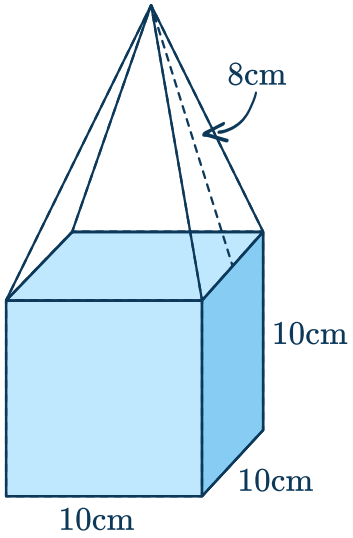
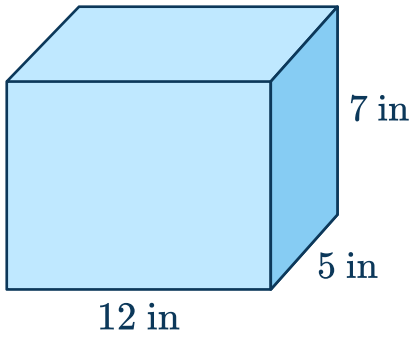
Surface Area Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
5	Find the surface area of the trapezoidal prism.  	Front and back: $A = \frac{1}{2} \times 9(8 + 18)$ $A = 117$ $2 \times 117 = 234in^2$ Bottom:$18 \times 9 = 162in^2$ Top: $9 \times 8 = 72in^2$ Right side:$9 \times 11 = 99in^2$ Left side: $9 \times 7 = 63in^2$ Surface area: 234 + 162 + 72 + 99 + 63 = 630 Surface area: $630in^2$	6.G.A.4
6	Here is the net of a rectangular prism. Find the surface area.  	There are 3 rectangular sides that are equal. $A = 20 \times 6 = 120ft^2$ $3 \times 120 = 360ft^2$ There are 3 square sides that are equal. $A = 6 \times 6 = 36ft^2$ $3 \times 36 = 108ft^2$ Surface area: $360 + 108 = 468ft^2$	6.G.A.4

Question number	Question	Answers	Standard
7	Here is the net of a triangular pyramid. Find the surface area.  	Area of the base: $A = \frac{1}{2}(4)(3.5)$ $A = 7cm^2$ Each of the triangular sides are equal. The area of one of them: $A = \frac{1}{2}(4)(17)$ $A = 34cm^2$ $3 \times 34 = 102cm^2$ Surface area: $7 + 102 = 109cm^2$	6.G.A.4
8	Find the lateral area of the hexagonal prism.  	Lateral area is the area of the sides. The sides are equal rectangles. The area of one of the sides is: $7 \times 12 = 84in^2$ There are 6 sides. $6 \times 84 = 504in^2$	6.G.A.4
9	Find the surface area of a cube with a 1 inch edge length.	Area of one side: 1 x 1 = 1 Surface area: $6 \times 1 = 6in^2$	6.G.A.4

Question number	Question	Answers	Standard
10	Find the surface area of the triangular prism.  	All three sides are rectangles. Area of bottom: $4 \times 18 = 72cm^2$ Area of the other 2 rectangular sides: $3 \times 18 = 54cm^2$ $2 \times 54 = 108cm^2$ Triangular bases: $Area = \frac{1}{2} \times 4 \times 4$ $Area = 8cm^2$ $2 \times 8 = 16cm^2$ Surface area: 72 + 108 + 16 = 196 cm^2	6.G.A.4
11	If the surface area of a cube is 96 ft^2. Find the edge length of the cube.	96 ÷ 6 = 16 The area of one of the square sides is 16 ft^2. So, the edge length is 4 ft.	6.G.A.4

Question number	Question	Answers	Standard
12	Damian built a wooden box with no top in woodshop. He wants to find the surface area of the wooden box in order to paint it. What is the surface area?  	The surface area includes 5 sides not 6 because the box does not have a top. Area of bottom: 12 x 3 = 36 in^2 Area of front and back: 12 x 5 = 60 in^2 (2 x 60 = 120 in^2) Area of right and left: 5 x 3 = 15 in^2 (2 x 15 = 30 in^2) Surface area: 36 +120 + 30 = 186 in^2	6.G.A.4
13	Stella is working on an art project for school. She created a paper mache square pyramid. If one pint of paint costs $10.24 and covers 7 square inches. How many pints does she need to buy, and how much will it cost?  	Surface area of the pyramid is: Square base: 2 x 2 = 4 Area of the triangular sides: $\frac{1}{2} \times 2 \times 6 = 6$ 4 x 6 = 24 Surface area: 24 + 4 = 28 in^2 If one pint covers 7 square inches, then 28 ÷ 7 = 4 Stella needs 4 cans. Cost: 10.24 x 4 = $40.96 Stella needs 4 cans, and it will cost her $40.96.	6.G.A.4

Question number	Question	Answers	Standard
14	Find the total surface area:  	Four triangular sides of the top pyramid: $Area = \frac{1}{2}(10)(8)$ $Area = 40cm^2$ $4 \times 40 = 160cm^2$ The 5 square sides of the bottom prism: 10 x 10 = 100 cm^2 5 x 100 = 500 cm^2 Total surface area: 500 + 160 = 660 cm^2	6.G.A.4
15	Will a rectangular piece of wrapping paper that is 36 inches by 20 inches be large enough to wrap a box that has the dimensions below.  	The area of the rectangular piece of wrapping paper: 36 x 20 = 720 in^2 Area of the bottom and the top: 12 x 5 = 60 2 x 60 = 120 in^2 Area of the right and left: 7 x 5 = 35 2 x 35 = 70 in^2 Area of front and back: 12 x 7 = 84 2 x 84 = 168 Surface area: 120 + 70 + 168 = 358 in^2 The wrapping paper will cover the box because the area of the wrapping paper is greater than the box.	6.G.A.4

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