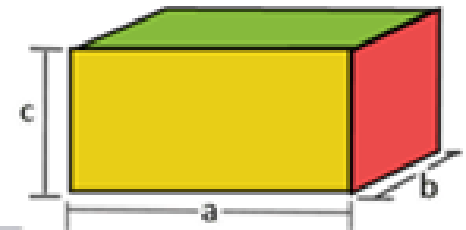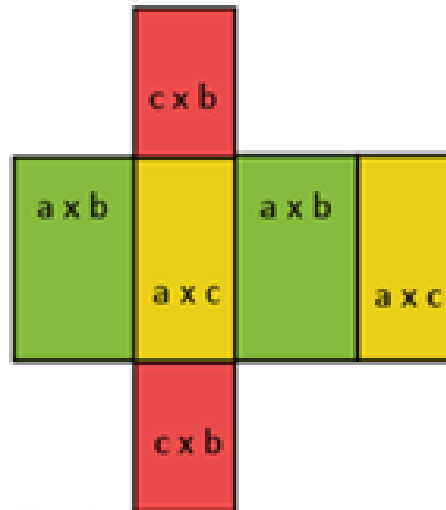# Surface Area

Surface area is the total area of the surface of a 3-dimensional object.

Finding Surface Area

How would find the area of the rectangular prism and its net shown to the right?

Find the area of all the faces and find their sum.

	c x b	
a x b	a x b	a x b
	a x c	a x c
	c x b	

1) Follow the steps below to find the surface area of the following nets.

Steps
1) Label the faces of the box on problem B like problem A.
2) Count and record the units of length on each edge of the rectangles or squares.
3) Use the length and width of the edges to find the area of each part of the net.
4) Add up all the areas from each side to find the surface area of the rectangular prism.
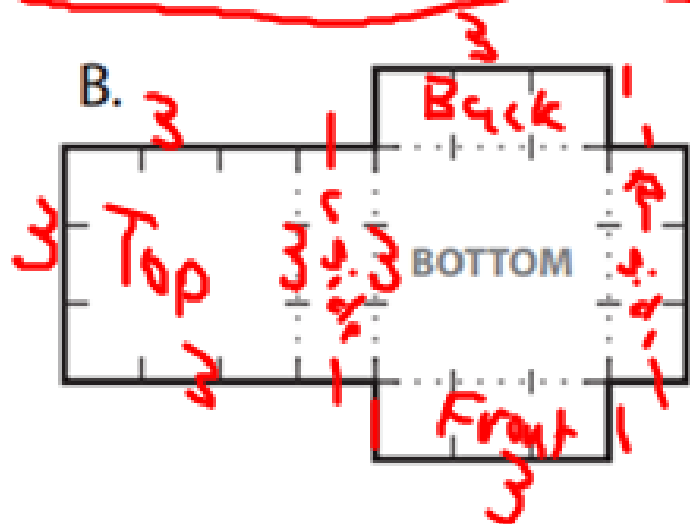5) Mark in the grid for each net and count how many squares are in each net to check your answer.

A.

BACK 3, 2, 2, 3
LEFT SIDE 2, 6, 6
BOTTOM 6
RIGHT SIDE 6, 2
TOP 3, 6
FRONT 3, 2, 3, 2, 3
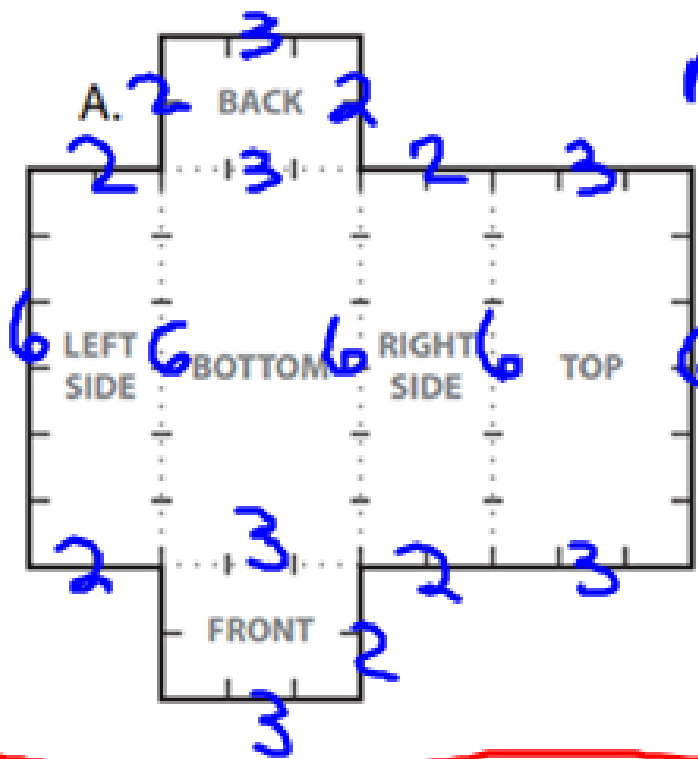
$A \text{ of } T+B \square = 6(3) = 18 \text{ units}^2$

$18 \cdot 2 = \underline{36 \text{ units}^2}$

$A \text{ of } L+R \square = 2(6) = 12 \text{ units}^2$

$12(2) = \underline{24 \text{ units}^2}$

$A \text{ of } F+B \square = 3(2) = 6 \text{ un.ts}^2$

$6 \cdot 2 = \underline{12 \text{ units}^2}$

Surface Area = $\underline{72 \text{ units}^2}$

$SA = 36 + 24 + 12 = 72$

B.

3, 3, **Back** 3, 1
Top 3, 3, 3, **BOTTOM**
3, 3, **Front** 1, 1
3

$A \text{ of } T+B \square = 3 \cdot 3 = 9 \text{ units}^2 \quad 9 \cdot 2 = \underline{18 \text{ units}^2}$

$A \text{ of } L+R \square = 3 \cdot 1 = 3 \text{ un.ts}^2 \quad 3(2) = \underline{6 \text{ units}^2}$

$A \text{ of } F+B \square = 3 \cdot 1 = 3 \text{ units}^2$

$3(2) = \underline{6 \text{ units}^2}$
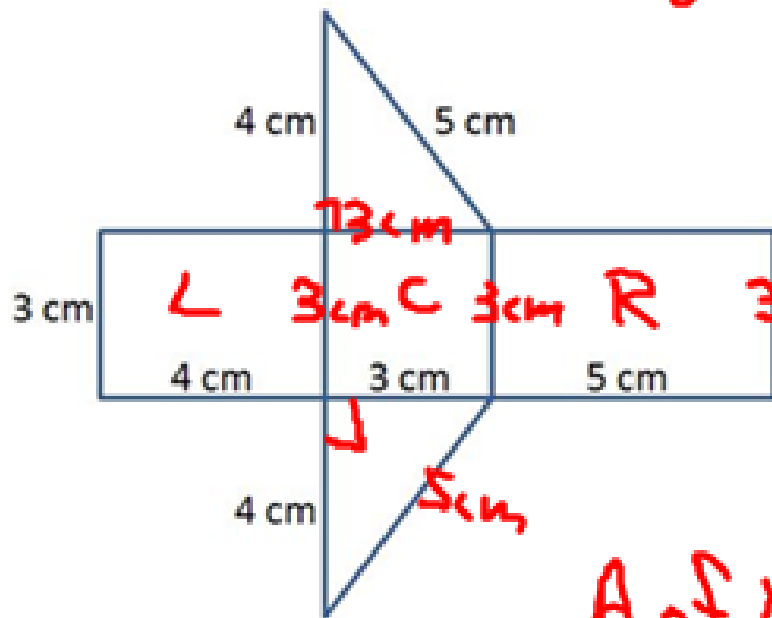
Surface Area = $\underline{30 \text{ units}^2}$

$SA = 6 + 6 + 18$

2) Find the surface area of the following 3D figures' nets. Make sure to say what 3D figure each net would form.

A) Type of 3D Figure → *Triangular Prism*

4 cm   5 cm

12 cm

3 cm   L   3 cm   C   3 cm   R   3 cm

4 cm   3 cm   5 cm

4 cm   5 cm

$A \text{ of } \triangle = \frac{1}{2}(4)(3) = 6 cm^2$

$6(2) = \underline{12 cm^2}$

$SA = 12 + 12 + 9 + 15 = 48 cm^2$
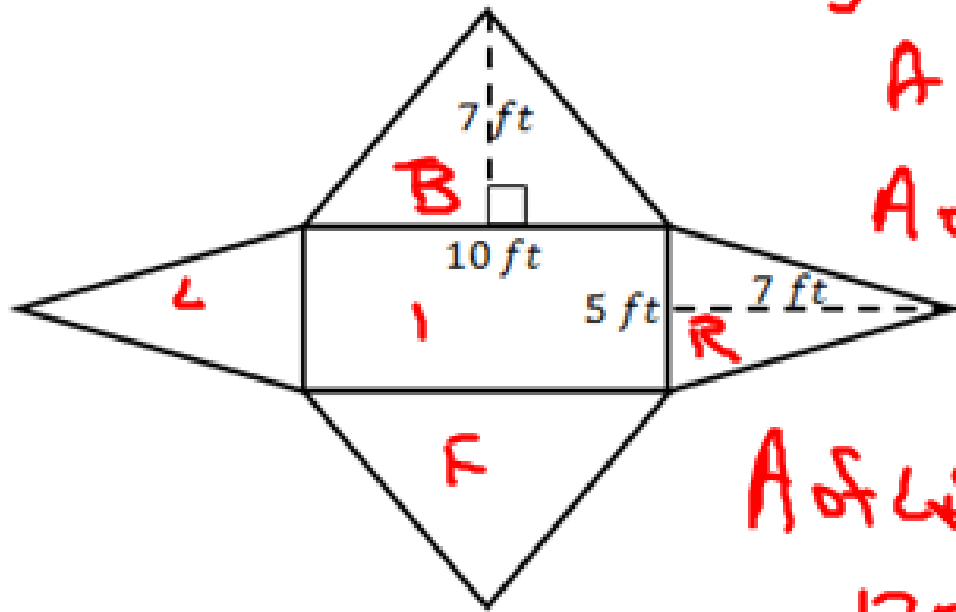
$A \text{ of } L\square = 4 \cdot 3 = \underline{12 cm^2}$

$A \text{ of } C\square = 3(3) = \underline{9 cm^2}$

$A \text{ of } R\square = 3(5) = \underline{15 cm^2}$

Surface Area = $48 cm^2$

B) Type of 3D Figure → Rectangular Pyramid

7 ft

B

10 ft

L

1

5 ft

R

7 ft

F

$A \text{ of } \square = 5(10) = 50 \text{ ft}^2$

$A \text{ of FRB}\triangle = \frac{1}{2}(10)(7) = 35 \text{ ft}^2$

$35(2) = 70 \text{ ft}^2$

$A \text{ of LR}\square = \frac{1}{2}(5)(7) = 17.5 \text{ ft}^2$

$17.5(2) = 35 \text{ ft}^2$
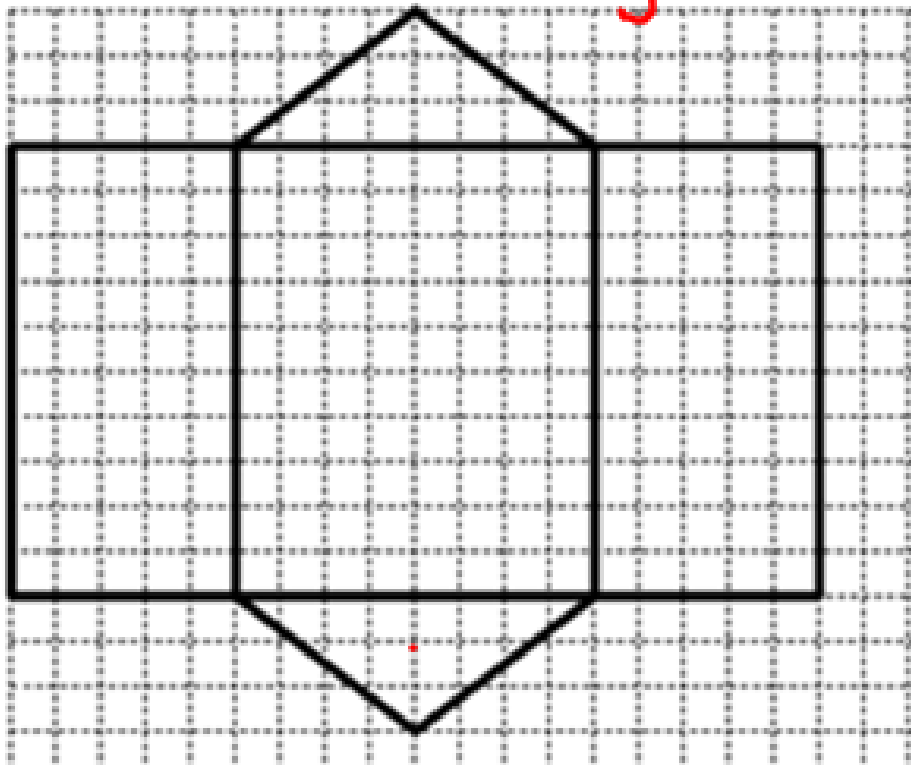
Surface Area = 155 ft²

$SA = 70 + 50 + 35 = 155 \text{ ft}^2$

C) Type of 3D Figure → Triangular Prism

Surface Area = _____