Week of May 18 - G6 M5 L17 + 18 Problem Set Solutions

Problem Set Solutions:

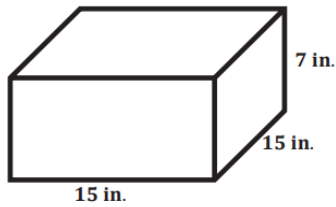Calculate the surface area of each figure below. Figures are not drawn to scale.
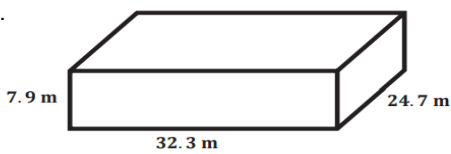
1.

7 in.

15 in.

15 in.

$SA = 2(15 \text{ in.})(15 \text{ in.}) + 2(15 \text{ in.})(7 \text{ in.}) + 2(15 \text{ in.})(7 \text{ in.})$

$SA = 450 \text{ in}^2 + 210 \text{ in}^2 + 210 \text{ in}^2$
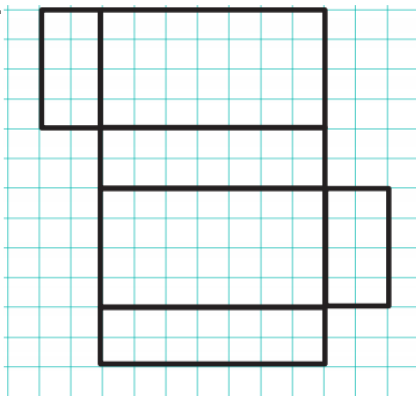
$SA = 870 \text{ in}^2$

2.

7.9 m

24.7 m

32.3 m

$SA = 2(32.3 \text{ m})(24.7 \text{ m}) + 2(32.3 \text{ m})(7.9 \text{ m}) + 2(24.7 \text{ m})(7.9 \text{ m})$

$SA = 1,595.62 \text{ m}^2 + 510.34 \text{ m}^2 + 390.26 \text{ m}^2$
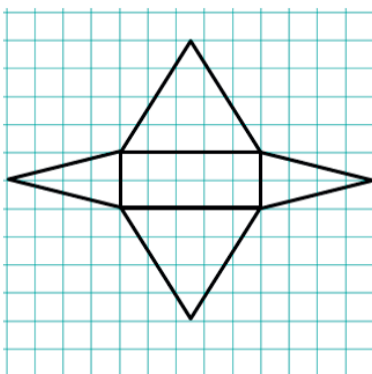
$SA = 2,496.22 \text{ m}^2$

3.

Name of Shape: Rectangular Prism

Surface Area: $(2 \text{ ft.} \times 4 \text{ ft.}) + (2 \text{ ft.} \times 4 \text{ ft.}) + (4 \text{ ft.} \times 7 \text{ ft.}) + (4 \text{ ft.} \times 7 \text{ ft.}) + (7 \text{ ft.} \times 2 \text{ ft.}) + (7 \text{ ft.} \times 2 \text{ ft.})$

Work: $2(2 \text{ ft.} \times 4 \text{ ft.}) + 2(4 \text{ ft.} \times 7 \text{ ft.}) + 2(7 \text{ ft.} \times 2 \text{ ft.})$
$= 16 \text{ ft}^2 + 56 \text{ ft}^2 + 28 \text{ ft}^2 = 100 \text{ ft}^2$

4.

Name of Shape: Rectangular Pyramid

Surface Area: $(2 \text{ ft.} \times 5 \text{ ft.}) + \left(\frac{1}{2} \times 2 \text{ ft.} \times 4 \text{ ft.}\right) + \left(\frac{1}{2} \times 2 \text{ ft.} \times 4 \text{ ft.}\right) + \left(\frac{1}{2} \times 5 \text{ ft.} \times 4 \text{ ft.}\right) + \left(\frac{1}{2} \times 5 \text{ ft.} \times 4 \text{ ft.}\right)$

Work: $2 \text{ ft.} \times 5 \text{ ft.} + 2\left(\frac{1}{2} \times 2 \text{ ft.} \times 4 \text{ ft.}\right) + 2\left(\frac{1}{2} \times 5 \text{ ft.} \times 4 \text{ ft.}\right) = 10 \text{ ft}^2 + 8 \text{ ft}^2 + 20 \text{ ft}^2 = 38 \text{ ft}^2$