Name_____ Date_____

Shape and Space
Unit 1 Line Master 5d

Answers

Surface area of a triangular prism = 2 × area of one triangular base + sum of the areas of the 3 rectangular faces

Prism 1

Area of triangles:

$2 \times \frac{1}{2}(5 \times 4.3) = 21.5$

The area of the triangles is 21.5 cm^2.

Area of rectangles:

$3(10 \times 5) = 3 \times 50$
$= 150$

The area of the rectangles is 150 cm^2.

The surface area of the triangular prism is 21.5 cm^2 + 150 cm^2, or 171.5 cm^2.

Prism 2

Area of triangles:

$2 \times \frac{1}{2}(4 \times 5.7) = 22.8$

The area of the triangles is 22.8 cm^2.

Area of rectangles:

$2(6 \times 9) + 4 \times 9 = 2 \times 54 + 36$
$= 108 + 36$
$= 144$

The area of the rectangles is 144 cm^2.

The surface area of the triangular prism is 22.8 cm^2 + 144 cm^2, or 166.8 cm^2.

Prism 3

Area of triangles:

$2 \times \frac{1}{2}(12 \times 13.4) = 160.8$

The area of the triangles is 160.8 cm^2.

Area of rectangles:

$12 \times 36 + 18 \times 36 + 13.4 \times 36$
$= 432 + 648 + 482.4$
$= 1562.4$

The area of the rectangles is 1562.4 cm^2.

The surface area of the triangular prism is 160.8 cm^2 + 1562.4 cm^2, or 1723.2 cm^2.