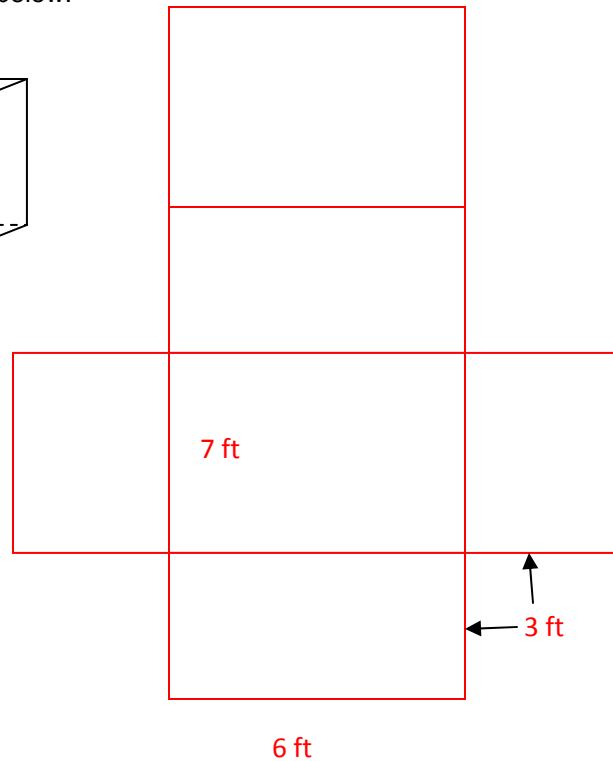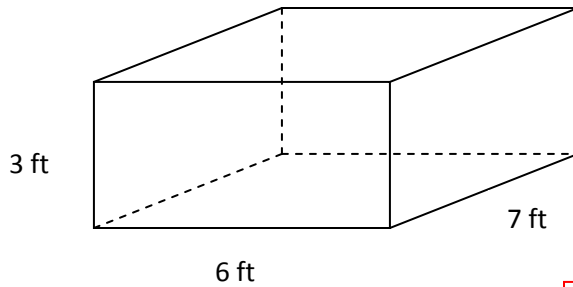**Geometry**
Unit: Surface Area and Volume
Section: Surface Area and Volume of Prisms and Cylinders

Review Worksheet KEY

1) Find the surface area and volume of the prism below.

3 ft

6 ft

7 ft

7 ft

3 ft

6 ft

Area of each surface:
Two sides: (6)(3) = 18
Two sides: (7)(3) = 21
Two sides: (6)(7) = 42
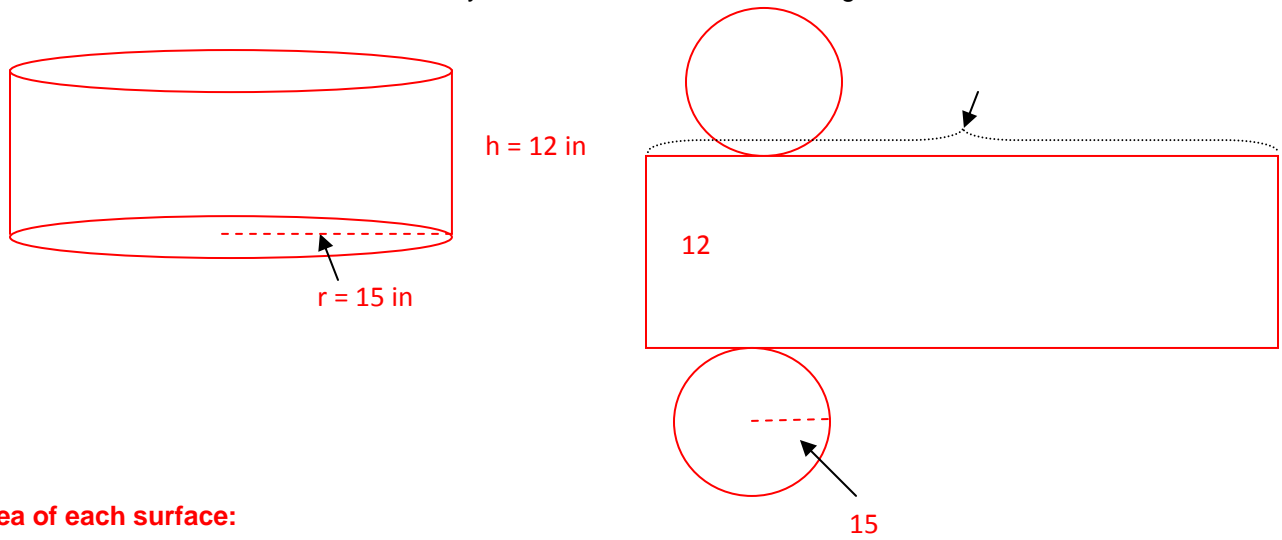
Add areas together:
2(18) + 2(21) + 2(42) = 162

Label:
The total surface area is 162 ft^2.

Volume:
(area of base)(height) = (42)(3) = 126 ft^3.

2) Find the surface area and volume of a cylinder with radius 15 in and height 12 in.

h = 12 in

r = 15 in

12

15

Area of each surface:

Two circles: $\pi(15)^2 = 225\pi$

Rectangle: $(30\pi)(12) = 360\pi$
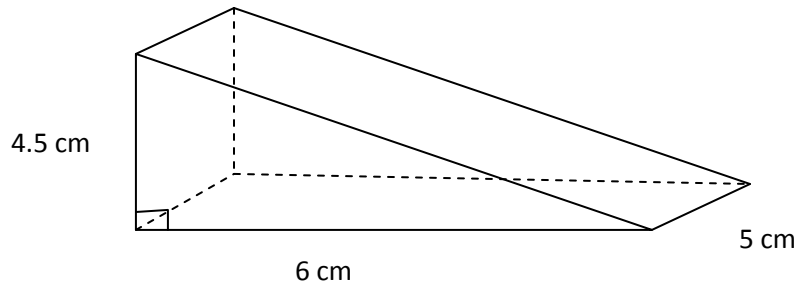
Add areas together:

$2(225\pi) + 360\pi = 810\pi$

Label:

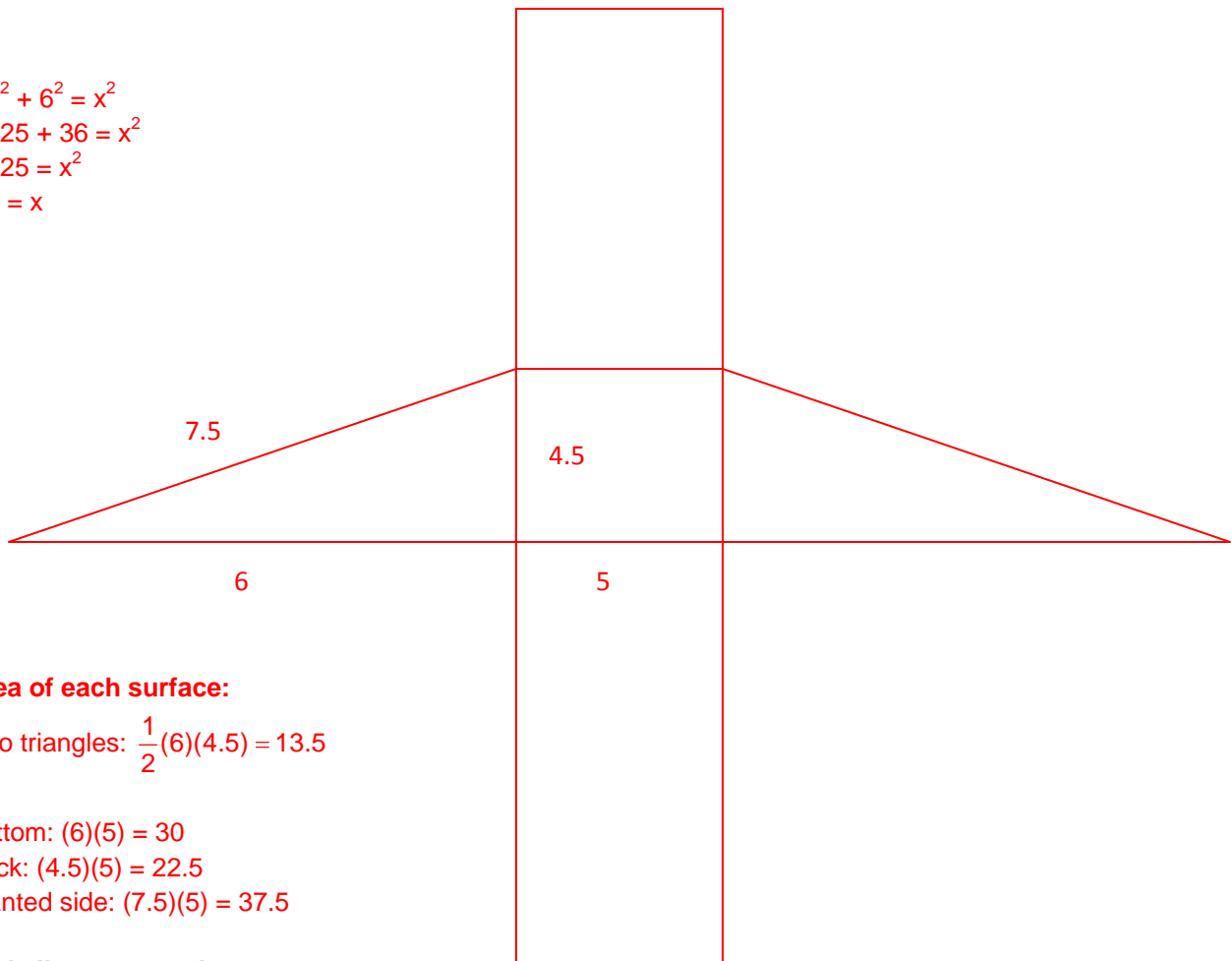The total surface area is 810π in^2. (This is approximately 2544.69 in^2.)

Volume:

(area of base)(height) = $(225\pi)(12) = 2700\pi$ in^3. (This is approximately 8482.30 in^3.)

3) Find the surface area and volume of the prism below.

4.5 cm

6 cm

5 cm

$4.5^2 + 6^2 = x^2$
$20.25 + 36 = x^2$
$56.25 = x^2$
$7.5 = x$

7.5

4.5

6

5

Area of each surface:

Two triangles: $\frac{1}{2}(6)(4.5) = 13.5$

Bottom: $(6)(5) = 30$
Back: $(4.5)(5) = 22.5$
Slanted side: $(7.5)(5) = 37.5$

Add all areas together:
$2(13.5) + 30 + 22.5 + 37.5 = 117$

Label:
The total surface area is 117 cm^2.

Volume:
(area of base)(height) = $(13.5)(5) = 67.5$ cm^3.

4) A cylinder with a radius of 4 in has a volume of 56π in^3. Find the height of the figure.

Volume = (area of base)(height)

Volume = $(\pi r^2)(h)$

$56\pi = (\pi 4^2)(h)$

$56\pi = (16\pi)(h)$

$\dfrac{56\pi}{16\pi} = \dfrac{16\pi h}{16\pi}$

$3.5 = h$

The height is 3.5 in.