Surface Area (and Formulas Review) – Worksheet #3

1) What is the capacity of the cargo truck?

\[ V = lwh \]
\[ V = (20 \times 4.5 \times 7) \]
\[ V = 630 \text{ ft}^3 \]

2) What is the minimum amount of wrapping paper needed to completely cover this present?

\[ SA = 2lw + 2lh + 2wh \]
\[ SA = 2(14 \times 9) + 2(14 \times 4) + 2(9 \times 4) \]
\[ SA = 252 + 112 + 72 \]
\[ SA = 436 \text{ in}^2 \]

3) How much stuff can this soup can hold if it is 5 cm in diameter and 9 cm tall?

\[ r = 2.5 \]
\[ d = 5 \]
\[ V = \pi r^2 h \]
\[ V = (3.14)(2.5)^2(9) \]
\[ V = (3.14)(6.25)(9) \]
\[ V = 176.625 \text{ cm}^3 \]

4) How much fabric is needed to make this Phillies pennant?

\[ A = \frac{1}{2}bh \]
\[ A = \frac{1}{2}(15 \times 36) \]
\[ A = 270 \text{ in}^2 \]
Surface Area (and Formulas Review) – Worksheet #3

Answer each real-life question using whatever formula is necessary. DRAW A PICTURE FIRST!

5) How much floor space is covered by a circular rug with a diameter of 8 feet?

\[
A = \pi r^2 \\
A = (3.14)(4)^2 \\
A = (3.14)(16) \\
A = 50.24 \text{ ft}^2
\]

6) What is the perimeter around a regulation basketball court? (94 feet long and 50 feet wide)

\[
P = 2l + 2w \\
P = 2(94) + 2(50) \\
P = 188 + 100 \\
P = 288 \text{ ft}
\]

7) What is the volume contained in a trash barrel that is 40 inches tall and 18 inches in diameter?

\[
V = \pi r^2 h \\
V = (3.14)(9)(40) \\
V = (3.14)(81)(40) \\
V = 10,173.6 \text{ in}^3
\]

8) How much carpet is needed to cover a living room that is 30 feet long and 18 feet wide?

\[
A = lw \\
A = 30 \cdot 18 \\
A = 540 \text{ ft}^2
\]

9) How many linear feet of fencing is needed to enclose a circular horse-track to have a 20-ft radius?

\[
C = 2\pi r \\
C = 2(3.14)(20) \\
C = 125.6 \text{ ft}
\]

10) How much wrapping paper is needed to wrap a box with the following dimensions: 12 in. by 8 in. by 30 in.

\[
SA = 2hw + 2lh + 2wh \\
SA = 2(30 \times 8) + 2(30 \times 12) + 2(8 \times 12) \\
SA = 480 + 720 + 192 \\
SA = 1,392 \text{ in}^2
\]