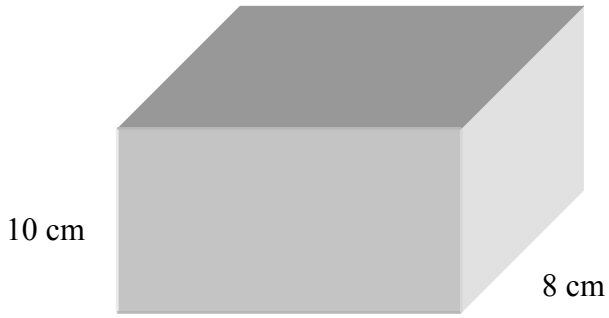
Math0090 Lab Worksheet #3

Objective: Solve problems #1 - #10 involving surface area and volume of geometric figures. #11 - #15 are review problems.

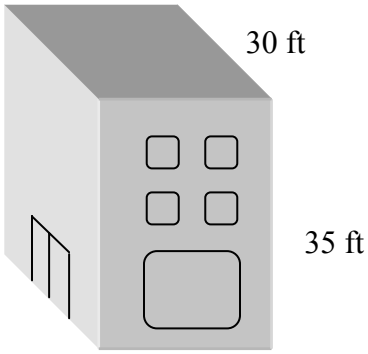
1. Use the diagram below to answer the question that follows.



Find the total amount of wrapping that is needed to cover the gift box.

A. 400 sq cm
B. 432 sq cm
C. 592 sq cm
D. 960 sq cm

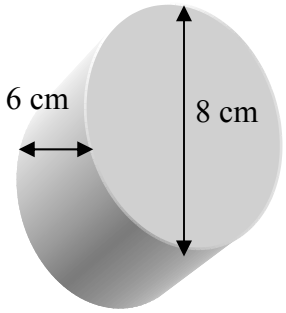
2. Use the diagram below to answer the question that follows.



The roof and all the walls of the warehouse building shown above will be painted. Which of the following expressions describes the total amount of surface to be painted (disregard all the windows, doors and vents)?

A. (30)(35)(20)
B. 2[(35)(20) + (35)(30)] + (20)(30)
C. (30)(20)(2) + (30)(35)(2) + (20)(35)(2)
D. 2[(20)(30) + (35)(30)] + (20)(35)

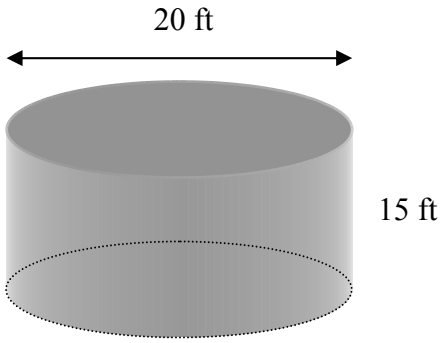
3. Use the diagram below to answer the question that follows.



The cylindrical solid shown above is made of metal. Which of the following expressions describes the total surface area?

A. 64π
B. 80π
C. 112π
D. 324π

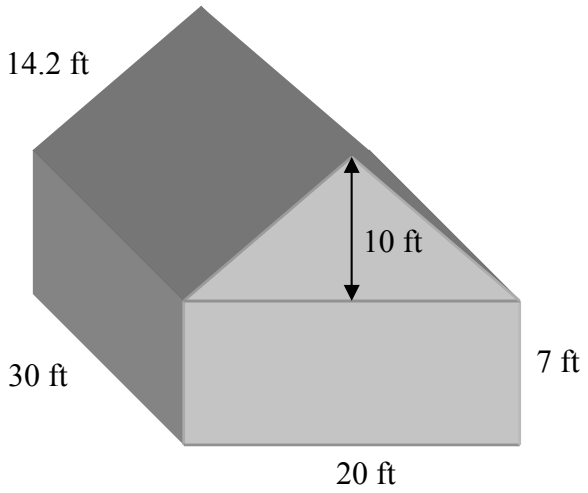
4. Use the diagram below to answer the question that follows.



The open cylindrical water tank shown above is anchored on concrete. The outside of the tank will be sprayed with anti-rust compound all around. Approximate the total amount of surface that will be sprayed on.

A. 471 ft^2
B. 942 ft^2
C. 4710 ft^2
D. 9420 ft^2

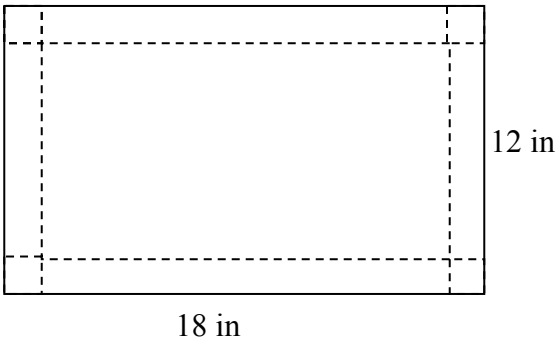
5. Use the diagram below to answer the question that follows.



The roof of the barn needs a new coat of paint while the walls need re-plastering. What is the total area that needs re-plastering?

A. 700 ft^2
B. 900 ft^2
C. 1752 ft^2
D. 4200 ft^2

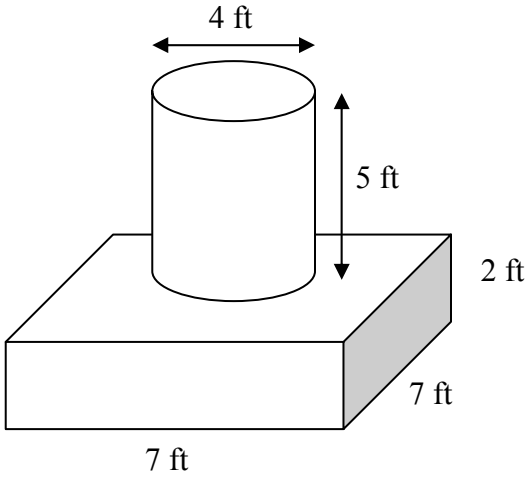
6. Use the diagram below to answer the question that follows.



A 2-inch square is cut from each corner of a 12-inch by 18-inch sheet of metal. The metal is folded along the dotted lines as indicated in the diagram. What is the volume of the pan formed by the metal?

A. 224 in^3
B. 256 in^3
C. 320 in^3
D. 430 in^3

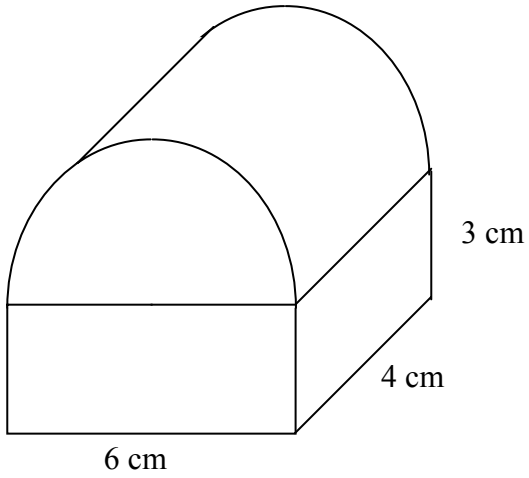
7. Use the diagram below to answer the question that follows.



What volume of cement is needed to construct the pedestal shown above?

A $(98 + 20\pi)$ ft^3
B $(98 + 80\pi)$ ft^3
C (118π) ft^3
D (178π) ft^3

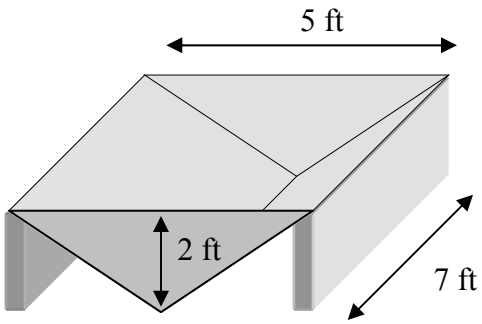
8. Use the diagram below to answer the question that follows.



A solid plastic mailbox model is to be constructed with the given dimensions as indicated in the figure above. Find the total volume of plastic needed to make the model.

A $(72 + 9\pi)$ cm^3
B $(72 + 18\pi)$ cm^3
C $(72 + 72\pi)$ cm^3
D (90π) cm^3

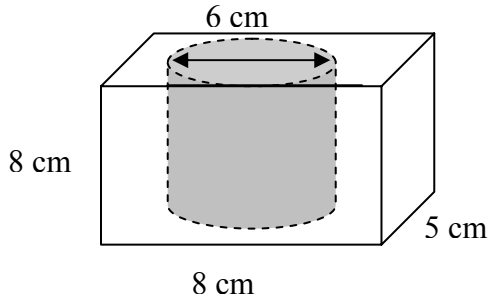
9. Use the diagram below to answer the question that follows.



A trough used to store water for the cows in a ranch has a depth of 2 feet, a width of 5 feet and a length of 7 feet. Find the amount of water it can hold when it is full.

A. $23\frac{1}{3}$ ft^3
B. 35 ft^3
C. 70 ft^3
D. 100 ft^3

10. Use the diagram below to answer the question that follows.



A hole 6 cm in diameter is bored through a square nut made of copper. If the square nut is 8 cm to a side and 5 cm thick, find the total volume of copper used to make the nut after the hole is cut.

A. $(320 - 288\pi)$ cm^3
B. $(320 - 72\pi)$ cm^3
C. (32π) cm^3
D. (248π) cm^3

11. Simplify. $\dfrac{7}{35x + 42}$

A. $\frac{1}{5x+42}$

B. $\frac{1}{35x+6}$

C. $\frac{1}{5x+6}$

D. 5x +6

12. Square $(3x-7w)$.

A. $9x^2-49w^2$

B. $9x^2+49w^2$

C. $9x^2-42xw+49w^2$

D. $9x^2-21xw+49w^2$

13. A car salesperson receives $575 a week in addition to 3% commission on all cars whose sticker price is above $4,500. One week he sold a Ford for $8,785 and a Buick for $5,832. How much did he earn that week?

A. $749.96

B. $1,013.51

C. $4,385.10

D. $4,960.10

14. Which of the following is a factor of $6y-2xy+3x-x^2$?

A. $(3-x)$

B. $(x-2y)$

C. $(2y-x)$

D. $(x+3)$

15. Subtract $(11r^3-4r^2-4)$ from $(3r^3-2r^2+8)$

A. $(-8r^3-6r^2+12)$

B. $(-8r^3+2r^2+12)$

C. $(14r^3-6r^2+12)$

D. $(14r^3+2r^2+12)$