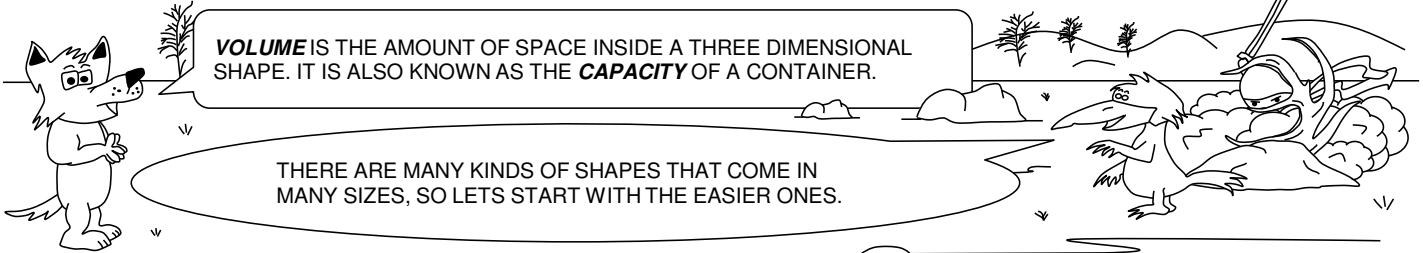


VOLUME OF PRISMS AND CYLINDERS

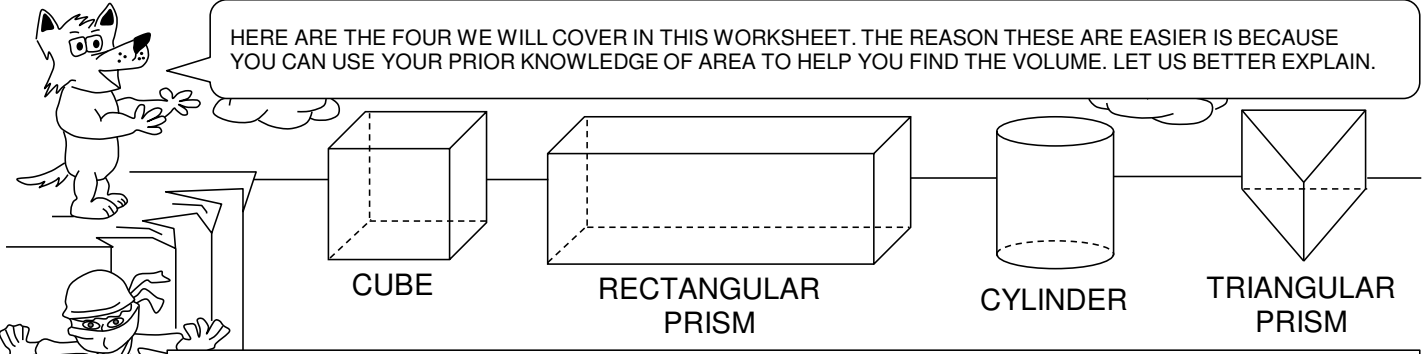
ANSWERS

PAGE 1 - INTRODUCTION



VOLUME IS THE AMOUNT OF SPACE INSIDE A THREE DIMENSIONAL SHAPE. IT IS ALSO KNOWN AS THE **CAPACITY** OF A CONTAINER.

THERE ARE MANY KINDS OF SHAPES THAT COME IN MANY SIZES, SO LETS START WITH THE EASIER ONES.



HERE ARE THE FOUR WE WILL COVER IN THIS WORKSHEET. THE REASON THESE ARE EASIER IS BECAUSE YOU CAN USE YOUR PRIOR KNOWLEDGE OF AREA TO HELP YOU FIND THE VOLUME. LET US BETTER EXPLAIN.

CUBE

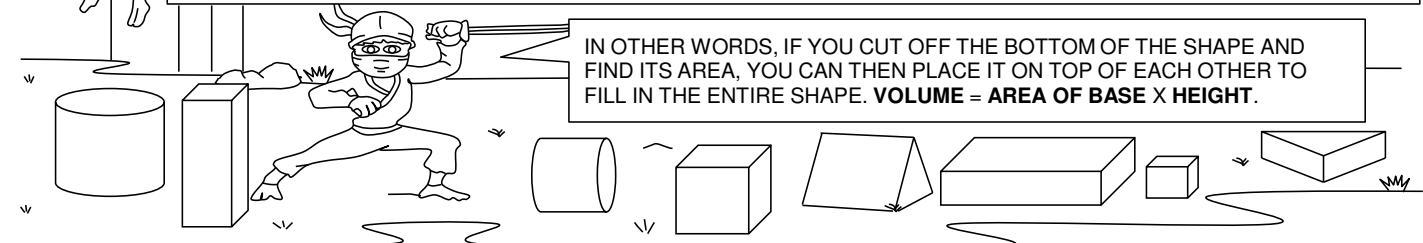
RECTANGULAR PRISM

CYLINDER

TRIANGULAR PRISM

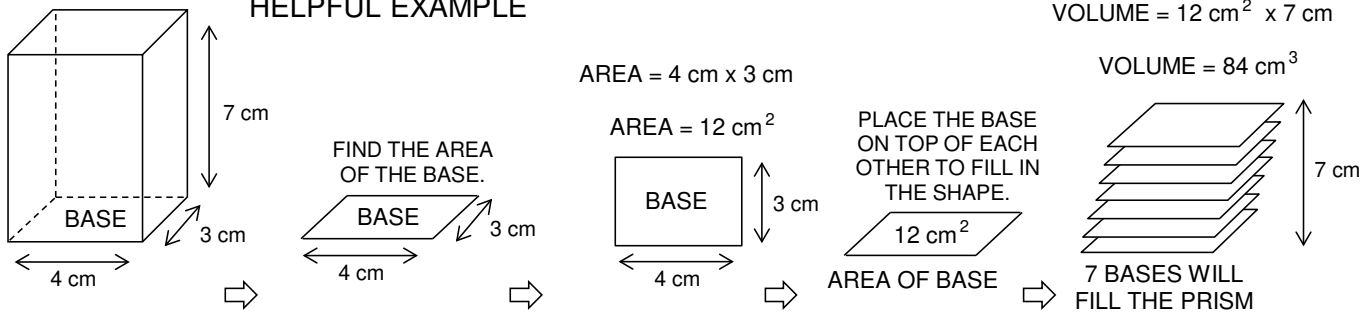


IF YOU LOOK CLOSELY YOU CAN SEE THAT ALL THESE SHAPES HAVE THE SAME TOP AND BOTTOM AND PARALLEL SIDES. THIS MEANS ALL WE NEED TO DO IS FIND THE AREA OF THE BASE AND THEN MULTIPLY IT BY THE HEIGHT.

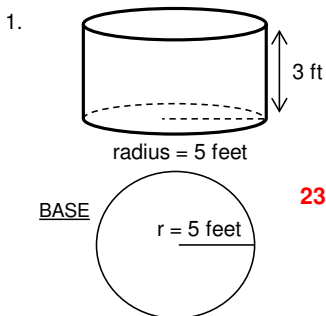


IN OTHER WORDS, IF YOU CUT OFF THE BOTTOM OF THE SHAPE AND FIND ITS AREA, YOU CAN THEN PLACE IT ON TOP OF EACH OTHER TO FILL IN THE ENTIRE SHAPE. **VOLUME = AREA OF BASE X HEIGHT.**

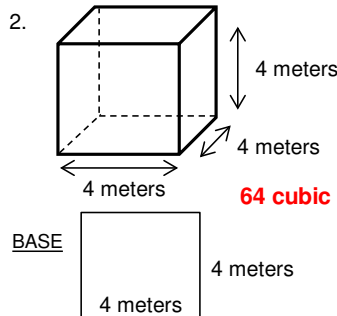
HELPFUL EXAMPLE



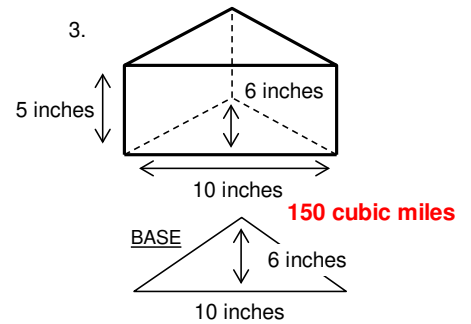
Now your turn. Find the volume of each shape.



235.5 cubic. ft



64 cubic meters



150 cubic miles

AREA of CIRCLE = $\pi \times r^2$
 $(A = \pi r^2)$
 $\pi = 3.14$

AREA of SQUARE = Length x Width

AREA of TRIANGLE = $\left(\text{Base of Triangle} \times \text{Height of Triangle} \right) \div 2$

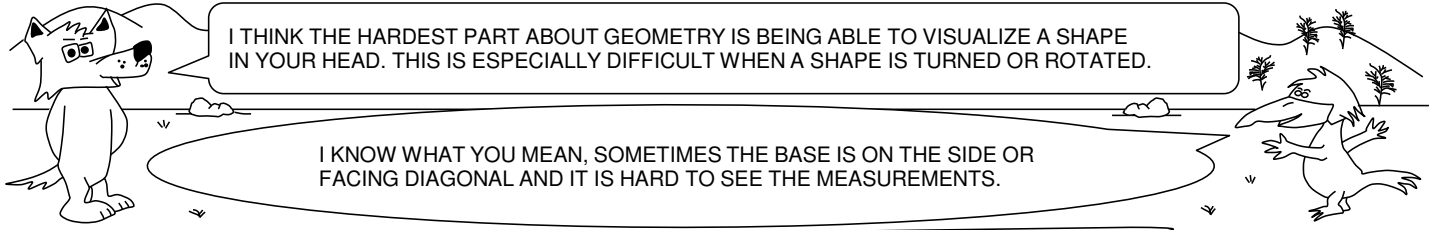


FIND THE AREA OF THE BASE AND THEN MULTIPLY IT BY THE HEIGHT.

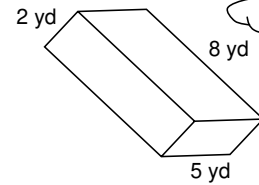
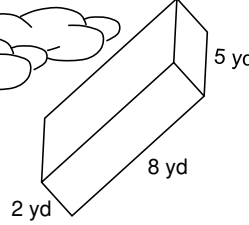
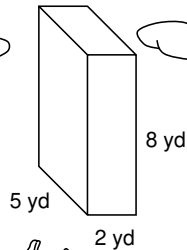
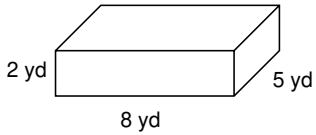
VOLUME OF PRISMS AND CYLINDERS

ANSWERS

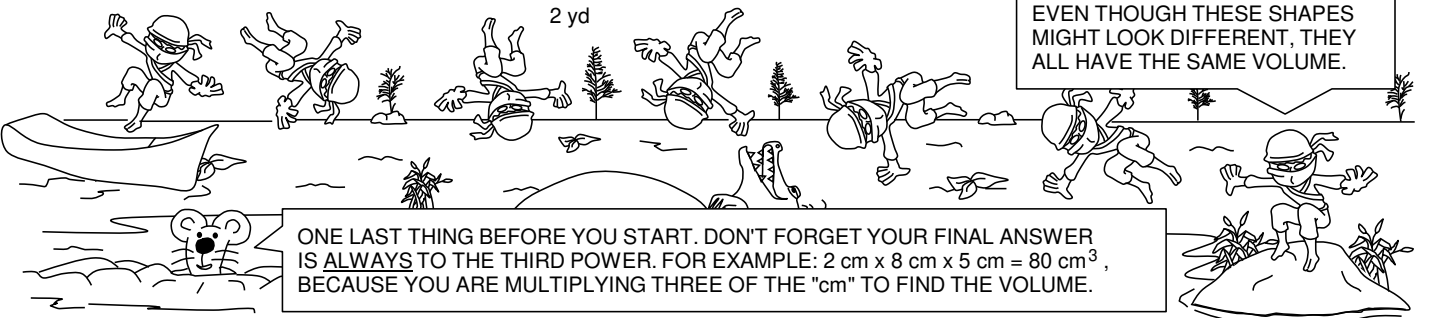
PAGE 2 - PROBLEMS



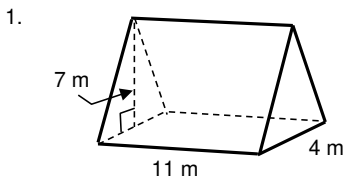
HELPFUL EXAMPLE



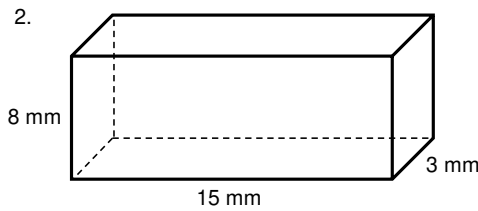
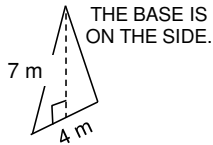
EVEN THOUGH THESE SHAPES MIGHT LOOK DIFFERENT, THEY ALL HAVE THE SAME VOLUME.



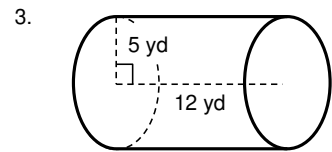
Find the volume of each shape. Use $\pi = 3.14$ for cylinders.



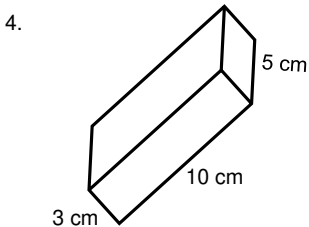
154 cubic meters



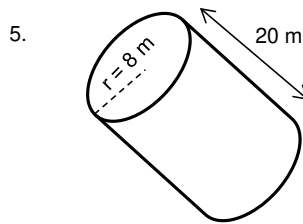
360 cubic mm



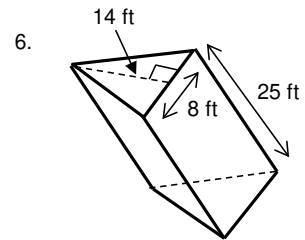
942 cubic yards



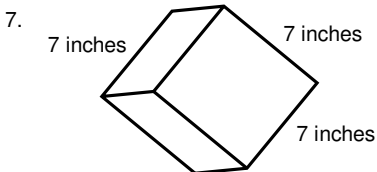
150 cubic cm



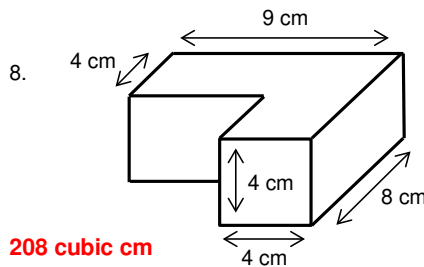
4,019.2 cubic meters



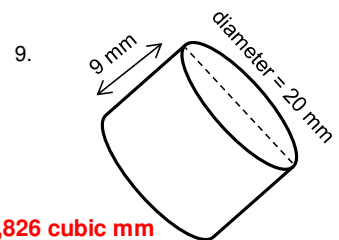
1,400 cubic feet



343 cubic inches
MATHCRUSH.COM



208 cubic cm



2,826 cubic mm