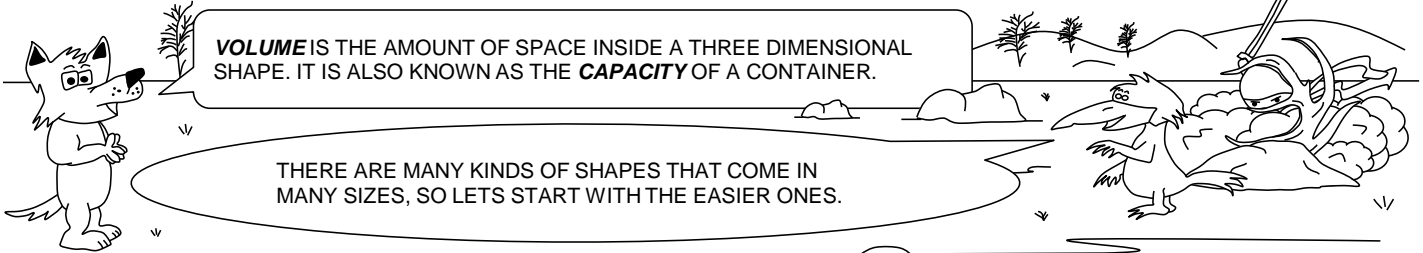


# VOLUME OF PRISMS AND CYLINDERS

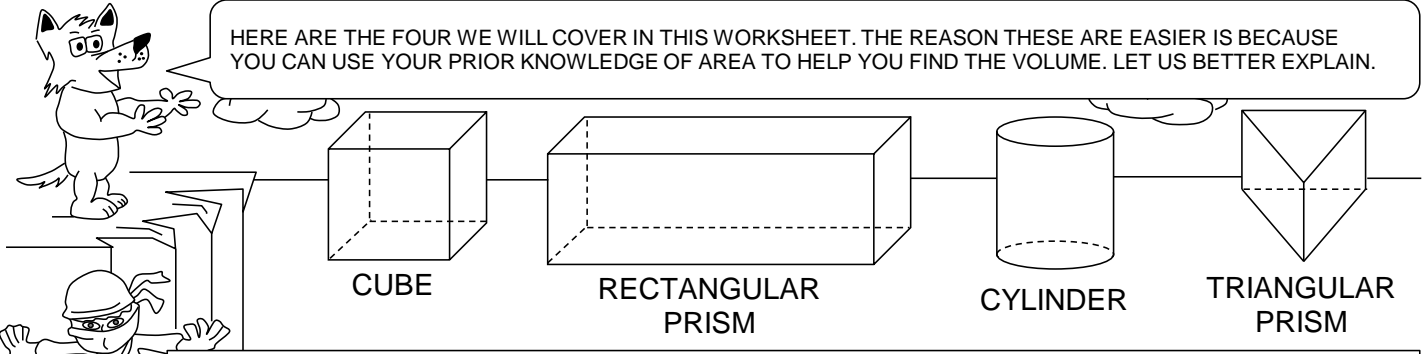
# ANSWERS

## 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

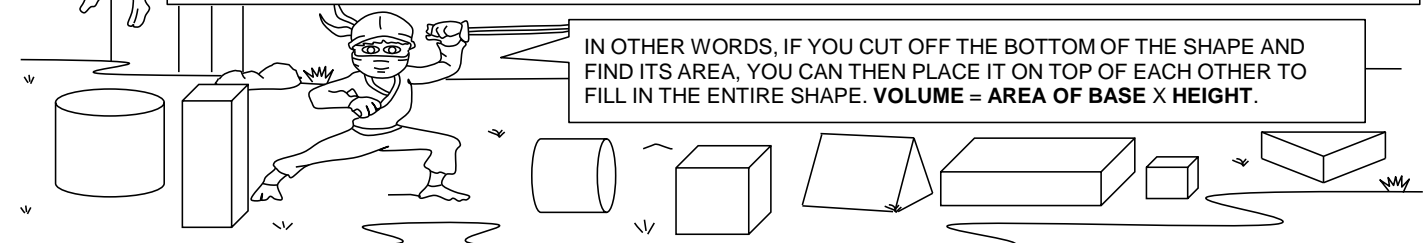
RECTANGULAR PRISM

CYLINDER

TRIANGULAR PRISM

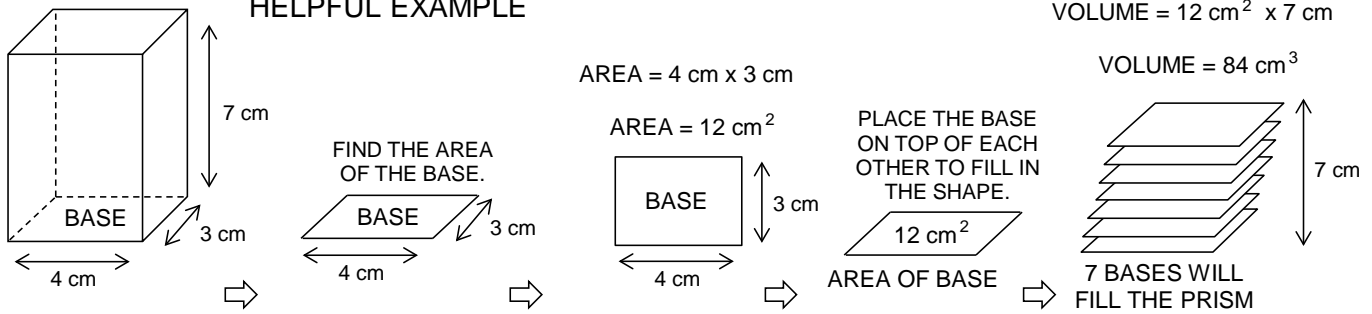


IF YOU LOOK CLOSELY YOU CAN SEE THAT ALL THESE SHAPES HAVE THE SAME TOP AND BOTTOM AND PARALLEL SIDES. THIS MEANS ALL WE NEED TO DO IS FIND THE AREA OF THE BASE AND THEN MULTIPLY IT BY THE HEIGHT.



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.

1. **235.5 cubic. ft**

BASE  $r = 5 \text{ feet}$

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

2. **64 cubic meters**

BASE 4 meters

AREA of SQUARE = Length x Width

3. **150 cubic miles**

BASE  $10 \text{ inches}$   
 $6 \text{ inches}$   
 $10 \text{ inches}$

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

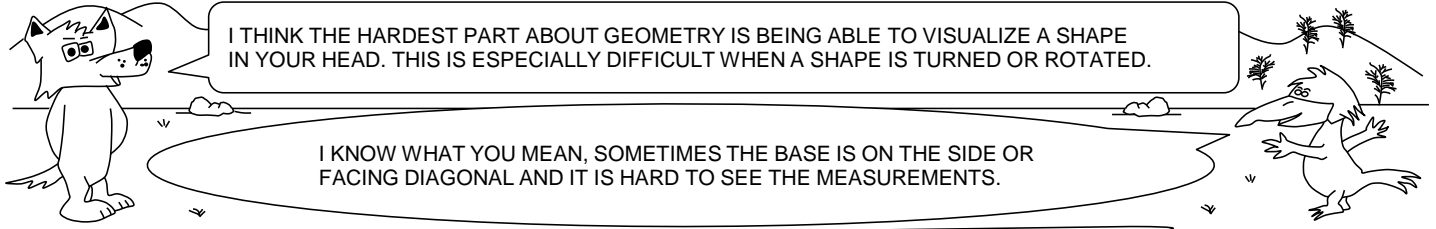


FIND THE AREA OF THE BASE AND THEN MULTIPLY IT BY THE HEIGHT.

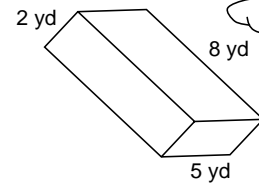
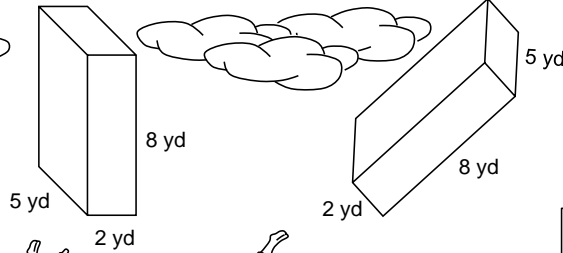
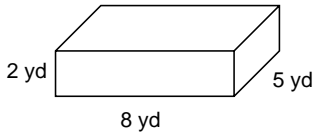
# VOLUME OF PRISMS AND CYLINDERS

# ANSWERS

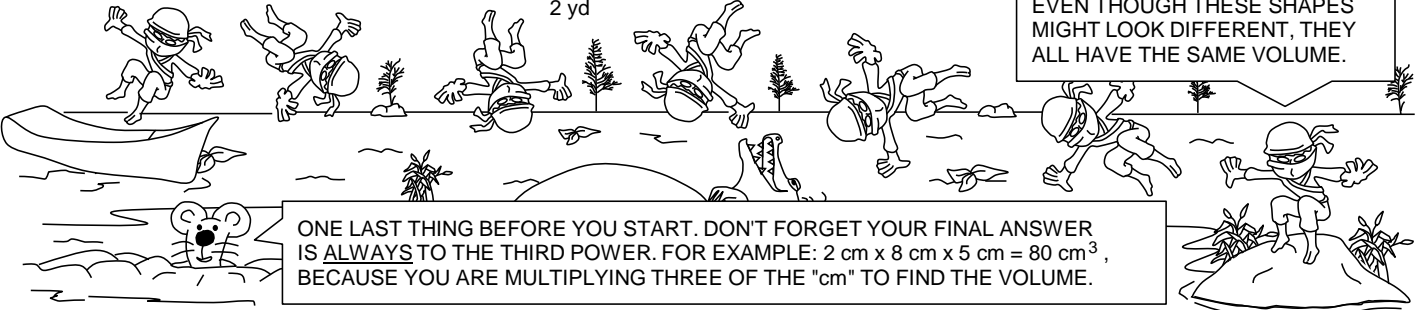
## PAGE 2 - PROBLEMS



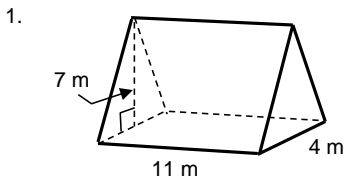
### HELPFUL EXAMPLE



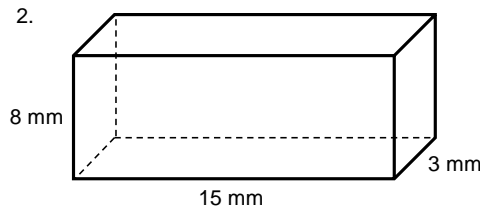
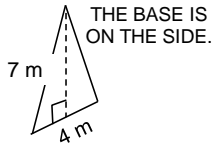
EVEN THOUGH THESE SHAPES MIGHT LOOK DIFFERENT, THEY ALL HAVE THE SAME VOLUME.



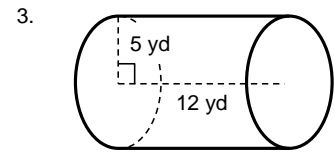
Find the volume of each shape. Use  $\pi = 3.14$  for cylinders.



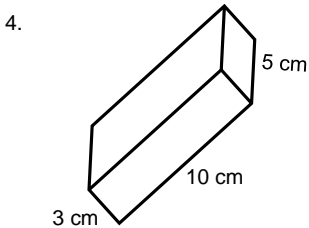
**154 cubic meters**



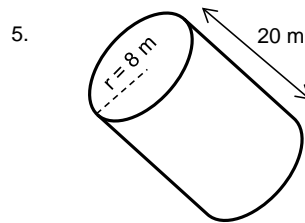
**360 cubic mm**



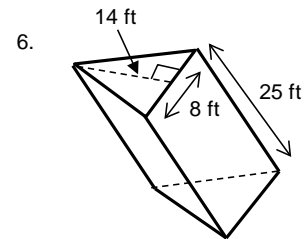
**942 cubic yards**



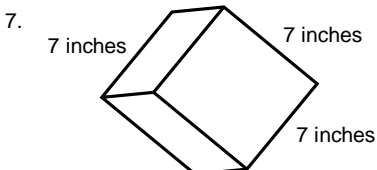
**150 cubic cm**



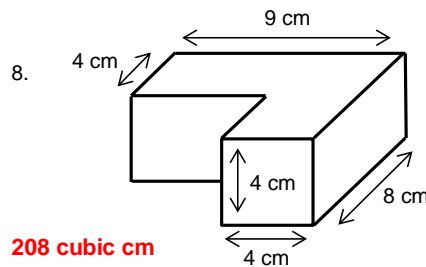
**4,019.2 cubic meters**



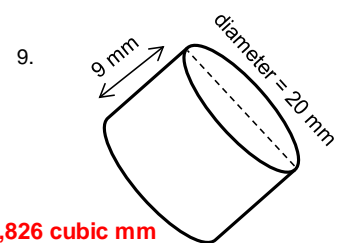
**1,400 cubic feet**



**343 cubic inches**  
MATHCRUSH.COM



**208 cubic cm**



**2,826 cubic mm**