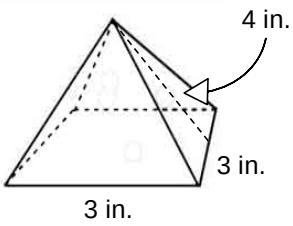
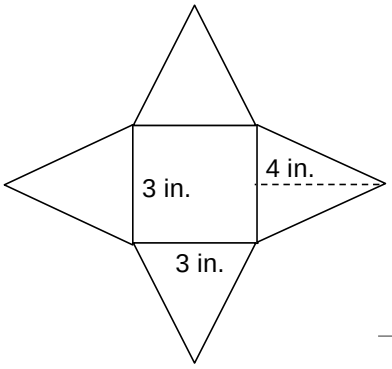
SURFACE AREA - PYRAMIDS

NAME:

THE ***SURFACE AREA*** OF A SOLID IS THE TOTAL AREA OF ITS SURFACE. TO FIND THE SURFACE AREA YOU WILL NEED TO FIND THE AREA OF EACH FACE (SIDE) AND THEN ADD THEM ALL TOGETHER.

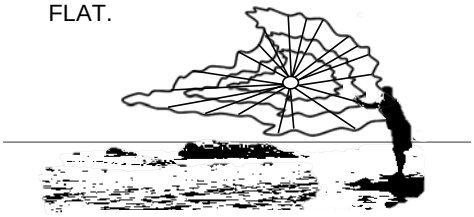
Helpful Example





THIS IS A **SQUARE *PYRAMID***. TO FIND THE SURFACE AREA WE NEED TO FIND THE AREA OF ALL 5 FACES.

WE CAN USE A **NET** TO HELP US BETTER SEE THE PIECES OF A SOLID. A **NET** SHOWS ALL THE FACES ON A FLAT SURFACE. IT'S LIKE UNFOLDING A SOLID SO IT'S FLAT.



THINK OF **NET** LIKE A FISHERMAN THROWING OUT HIS **NET**.

NOW IF YOU LOOK AT THE NET YOU CAN SEE WE NEED TO FIND THE AREA OF FOUR TRIANGLES AND ONE SQUARE. THE TRIANGLES HAVE A HEIGHT OF 4 INCHES AND A BASE OF 3 INCHES, AND THE SQUARE HAS SIDES OF 3 INCHES.

AREA OF TRIANGLE: $\frac{1}{2}$ x (3 in. x 4 in.) = 6 in.^{2}

BUT THERE ARE FOUR TRIANGLES SO WE NEED TO MULTIPLY BY 4. $\longrightarrow$ 6 in.^{2} x 4 = **24 in.^{2}**

AREA OF SQUARE: 3 in. x 3 in. = **9 in.^{2}**

NOW YOU JUST ADD THEM UP: 24 in.^{2} + 9 in.^{2} = **33 in.^{2}**

✻ WHEN FINDING THE AREAS OF THE TRIANGLES WE CAN ALSO USE THE PERIMETER OF THE BASE AND STILL GET THE SAME ANSWER. ✻

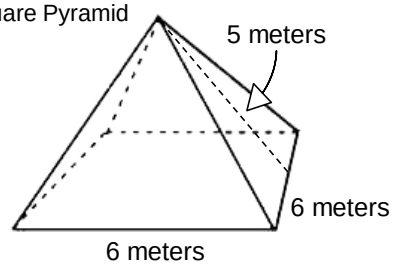
$\frac{1}{2}$ x (perimeter of square x height of triangle) = $\frac{1}{2}$ x (3 in. + 3 in. + 3 in. + 3 in.) x 4 in.

= $\frac{1}{2}$ x (12 in. x 4 in.) = **24 in.^{2}**

SEE WE GOT THE SAME AREA FOR ALL 4 TRIANGLES.

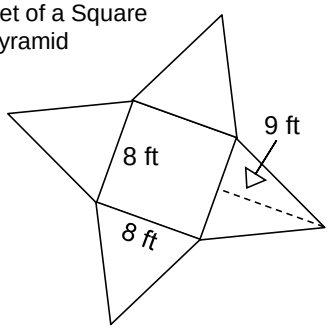
Now your turn. Find the surface area of each solid shape or net.

1. Square Pyramid



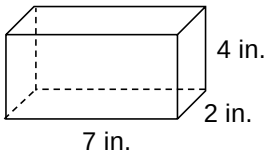
96 square meters

2. Net of a Square Pyramid



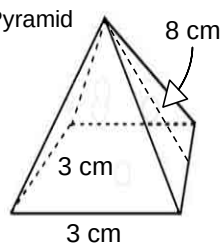
208 square feet

3. Rectangular Prism



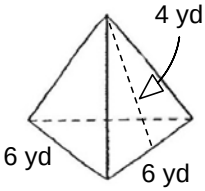
100 square inches

4. Square Pyramid

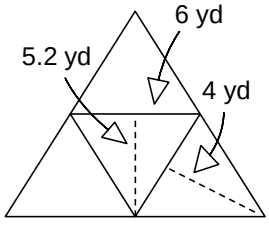


57 square centimeters

5. Triangular Pyramid



The net of the Triangular Pyramid



51.6 square yards