

Brandon Valley School District
District Learning Plan
April 20-24, 2020

Grade 6 Math



Brandon Valley School District Distance Learning Plan

LESSON/UNIT: Geometry

SUBJECT/GRADE: 6th Grade Math

DATES: 4/20-4/24



<p>What do students need to do?</p> <p><u>PART ONE link to BV instructional video for week of April 20-24, 2020</u></p> <p><u>PART TWO link to BV instructional video for week of April 20-24, 2020</u></p>	<p>Monday (4/20):</p> <ul style="list-style-type: none"> Students will work on graphing polygons on the coordinate plane by completing the Polygons on the Coordinate Plane Worksheet. Notes/examples are provided on the worksheet. <p>Tuesday (4/21):</p> <ul style="list-style-type: none"> Students should look over the provided notes OR watch the PART ONE instructional video (link to the left) on finding the surface area of rectangular prisms. Complete the Rectangular Prism Worksheet problem #1. <p>Wednesday (4/22):</p> <ul style="list-style-type: none"> Students should look over the provided notes (from Tuesday) OR re-watch the PART ONE instructional video (link to the left) on finding the surface area of rectangular prisms. Complete the Rectangular Prism worksheet Problem #2. <p>Thursday (4/23)</p> <ul style="list-style-type: none"> Students should look over the provided notes OR watch the PART TWO instructional video (link to the left) on finding the surface area of triangular prisms. Complete the Triangular Prism worksheet Problem #1. <p>Friday (4/24):</p> <ul style="list-style-type: none"> Students should look over the provided notes (from Thursday) OR re-watch the PART TWO instructional video (link to the left) on finding the surface area of triangular prisms. Complete the Triangular Prism worksheet Problem #2.
<p>What do students need to bring back to school?</p>	<ol style="list-style-type: none"> Polygons on the Coordinate Plane Worksheet Rectangular Prism Worksheet Triangular Prism Worksheet
<p>What standards do the lessons cover?</p>	<p>6.G.A. Solve real-world and mathematical problems involving area, surface area, and volume.</p> <p>3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.</p> <p>4. Represent three-dimensional figures using nets made up of rectangles and triangles and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.</p>
<p>What materials do students need? What extra resources can students use?</p>	<p>Need:</p> <ul style="list-style-type: none"> worksheets (see PDF documents below) <p>Extra:</p> <ul style="list-style-type: none"> Multiplication Table <ul style="list-style-type: none"> https://www.mathsisfun.com/tables.html
<p>What can students do if they finish early?</p>	<ul style="list-style-type: none"> ALEKS topics- https://my.mheducation.com/ <ul style="list-style-type: none"> *Continue working your topics *QuickTables (math fact practice) *assignments (if your teacher has assigned them) Khan Academy- https://www.khanacademy.org/math

	<ul style="list-style-type: none"> ● Find a rectangular prism in your house (cereal box, toy chest, etc). Find the volume and surface area of that prism. Take a picture of the item. Send the picture and work to your teacher. ● If it's nice outside, GO OUTSIDE and be ACTIVE!
Who can we contact if we have questions?	<p>Brandon Valley Intermediate School</p> <p>Principal- Mr. Skibsted- Nick.Skibsted@k12.sd.us</p> <p>Assistant Principal- Mr. Pearson- Rick.Pearson@k12.sd.us</p> <p>Math Teachers:</p> <p>Ms. VanRoekel: Rebecca.VanRoekel@k12.sd.us (blue team)</p> <p>Ms. Lewis: Layne.Lewis@k12.sd.us (white team)</p> <p>Ms. Wiese: Stacey.Wiese@k12.sd.us (red team)</p> <p>Mr. Kocer: Cassius.Kocer@k12.sd.us (silver team)</p>
<p>Notes: Worksheets do not have to be printed off. Problems can be answered on blank or lined paper. The math textbook can also be accessed online at https://my.mheducation.com/login.</p>	

Instructional materials are posted below (if applicable)

Brandon Valley School District

Name _____

Polygons on the Coordinate Plane

In an ordered pair, the first value is the x-coordinate. The x-coordinate determines how many units to move left or right of the origin. The second value is the y-coordinate. The y-coordinate determines how many units to move up or down from the origin.

(x, y)

Example 1

A rectangle has vertices $A(1,1)$, $B(1,3)$, $C(5,3)$, and $D(5,1)$. Use the coordinates to find the length of each side.

Width: Find the length of the horizontal lines.

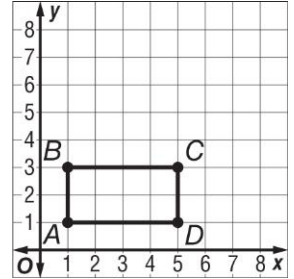
\overline{AD} is 4 units long.

\overline{BC} is 4 units long.

Length: Find the length of the vertical lines.

\overline{AB} is 2 units long.

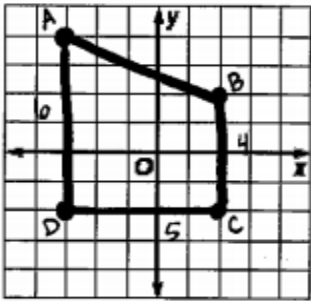
\overline{DC} is 2 units long.



Example 2

Graph the figure and classify it. Then find the area.

$A(-3, 4)$, $B(2, 2)$, $C(2, -2)$, $D(-3, -2)$



Classification - Trapezoid

Area - 25 units²

$$\begin{aligned} & \frac{(b_1 + b_2) \cdot h}{2} \\ & \frac{(6 + 4) \cdot 5}{2} \\ & = \frac{10 \cdot 5}{2} \\ & = \frac{50}{2} \\ & = 25 \text{ units}^2 \end{aligned}$$

Area Formulas

Rectangle/Parallelogram base \cdot height $(b \cdot h)$

Triangle $\frac{\text{base} \cdot \text{height}}{2}$ $(\frac{b \cdot h}{2})$

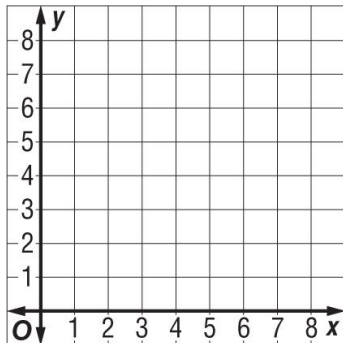
Trapezoid $\frac{(\text{base}_1 + \text{base}_2) \cdot h}{2}$ $(\frac{b_1 + b_2}{2}) \cdot h$

Name _____

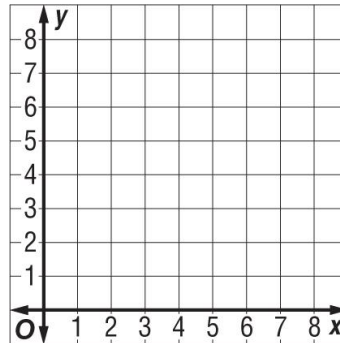
Polygons on the Coordinate Plane Worksheet

Graph each point on the coordinate plane. Find the length of each side of the rectangle.

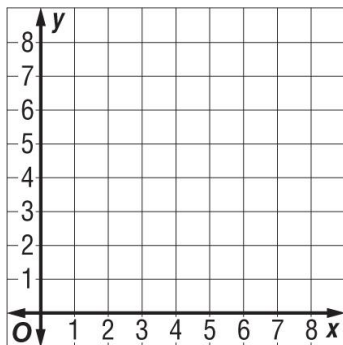
1. $R(1,1)$, $S(1,7)$, $T(5,7)$, $U(5,1)$



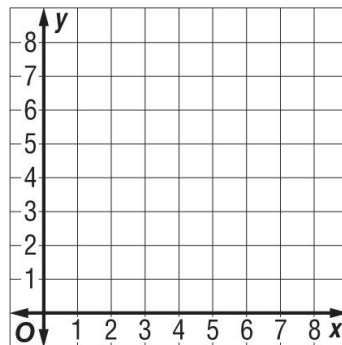
2. $E(3,6)$, $F(7,6)$, $G(7,2)$, $H(3,2)$



3. $E(1,7)$, $F(3,7)$, $G(3,4)$, $H(1,4)$

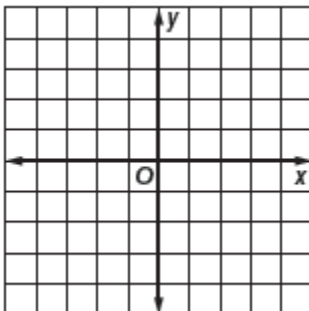


4. $W(2,7)$, $X(2,0)$, $Y(6,0)$, $Z(6,7)$



Graph each figure and classify it. Then find the area.

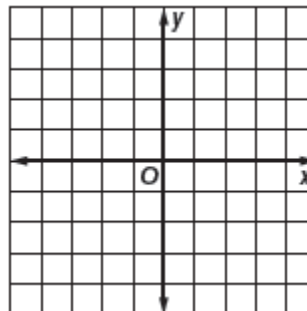
5. $A(-4, 4)$, $B(2, 1)$, $C(2, -1)$, $D(-4, -1)$



Classification _____

Area _____

6. $M(-4, 4)$, $N(4, 4)$, $P(-4, -4)$, $Q(4, -4)$

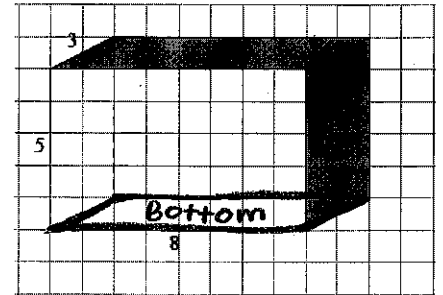
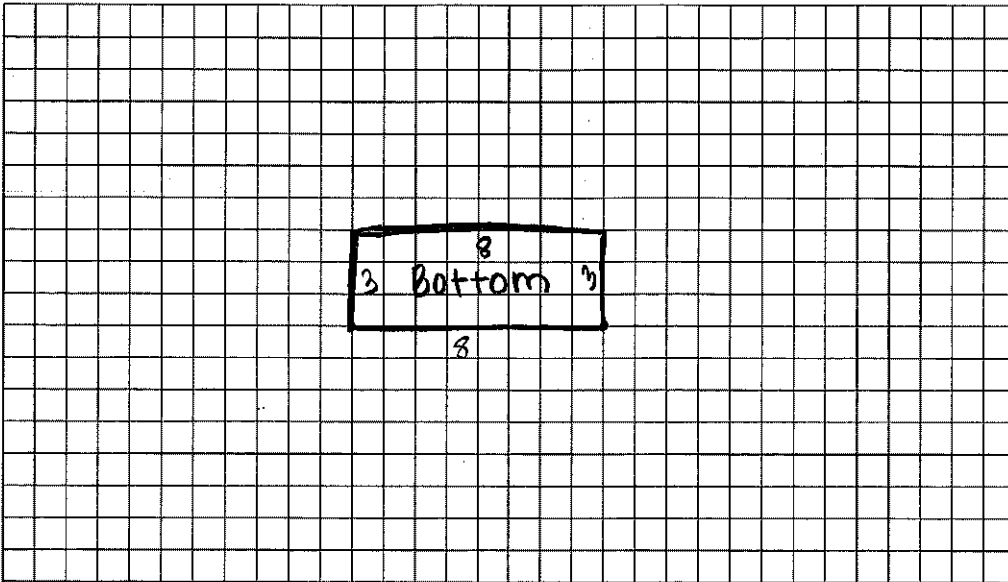


Classification _____

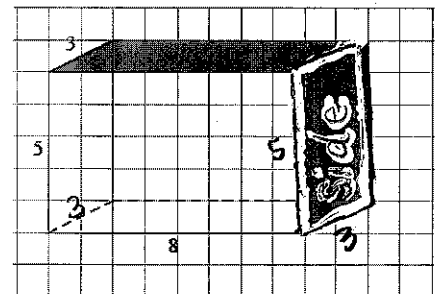
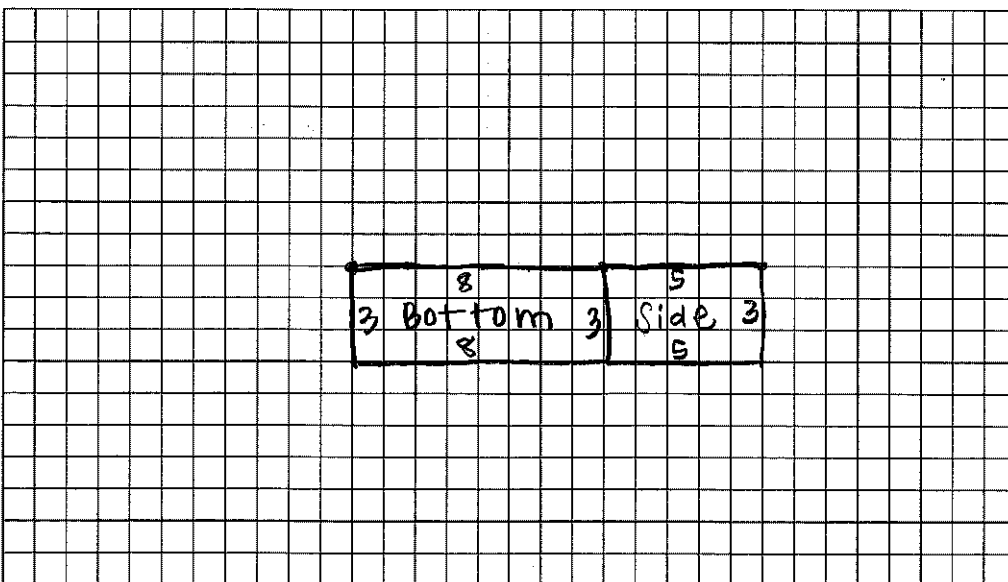
Area _____

Step-by-Step Guide to finding surface area as demonstrated in the video.

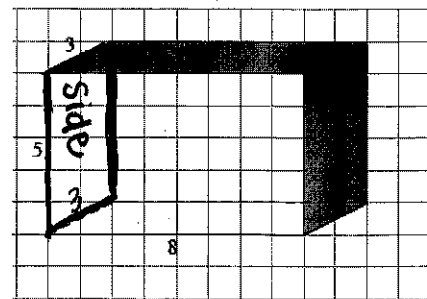
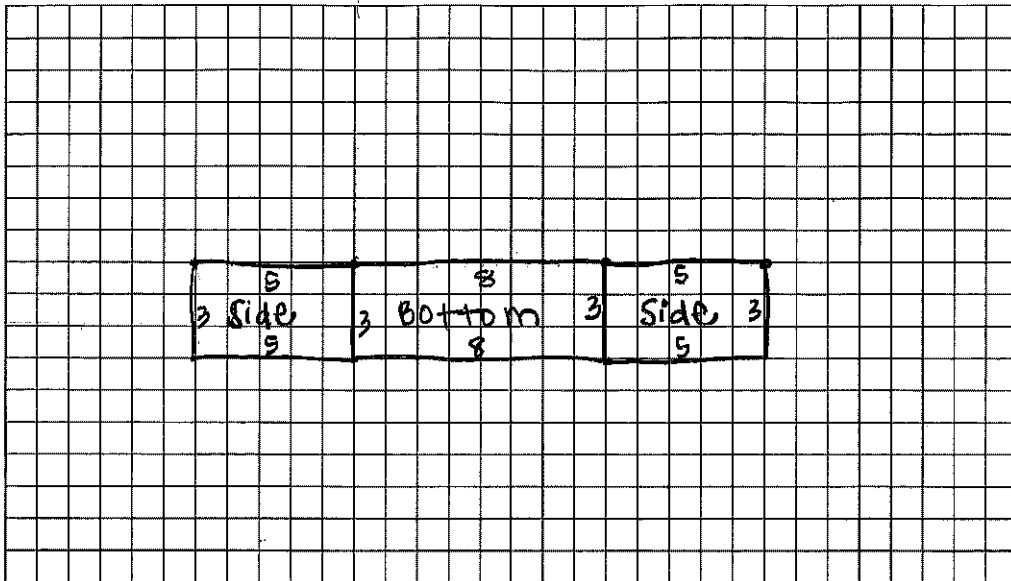
Create the net in the area below. Label the dimensions. Then find the surface area.



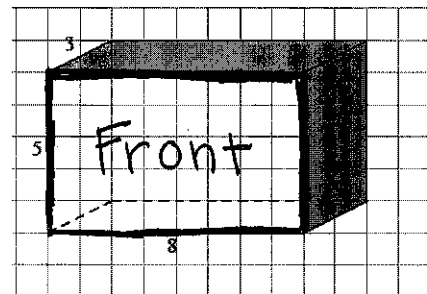
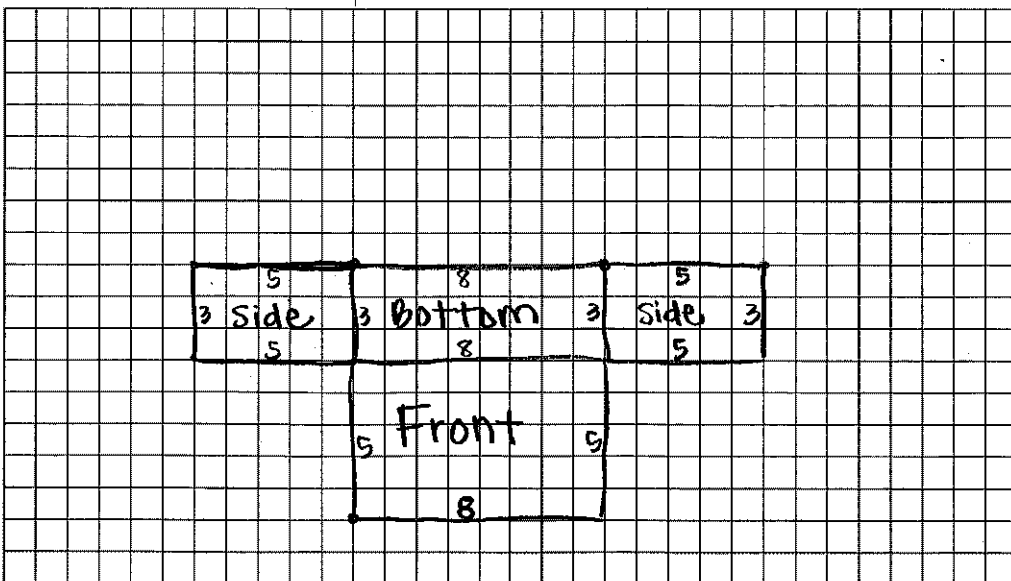
Create the net in the area below. Label the dimensions. Then find the surface area.



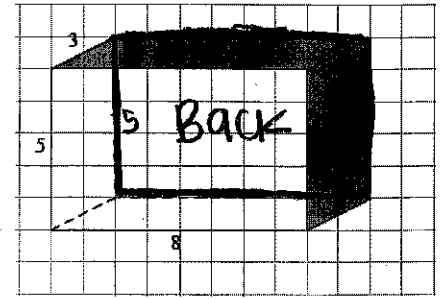
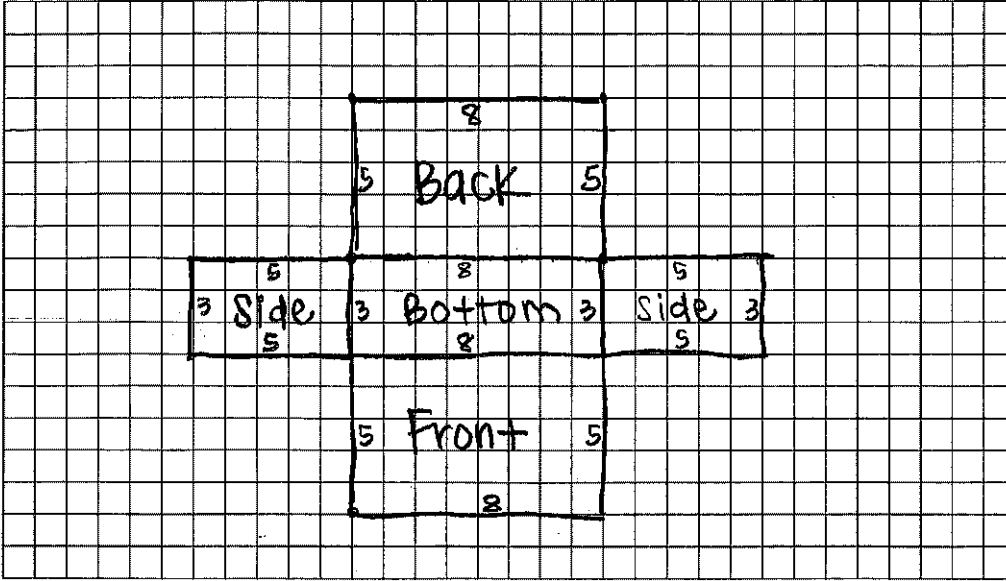
Create the net in the area below. Label the dimensions. Then find the surface area.



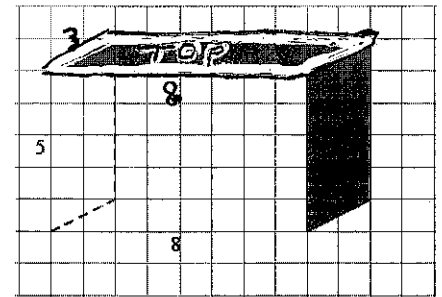
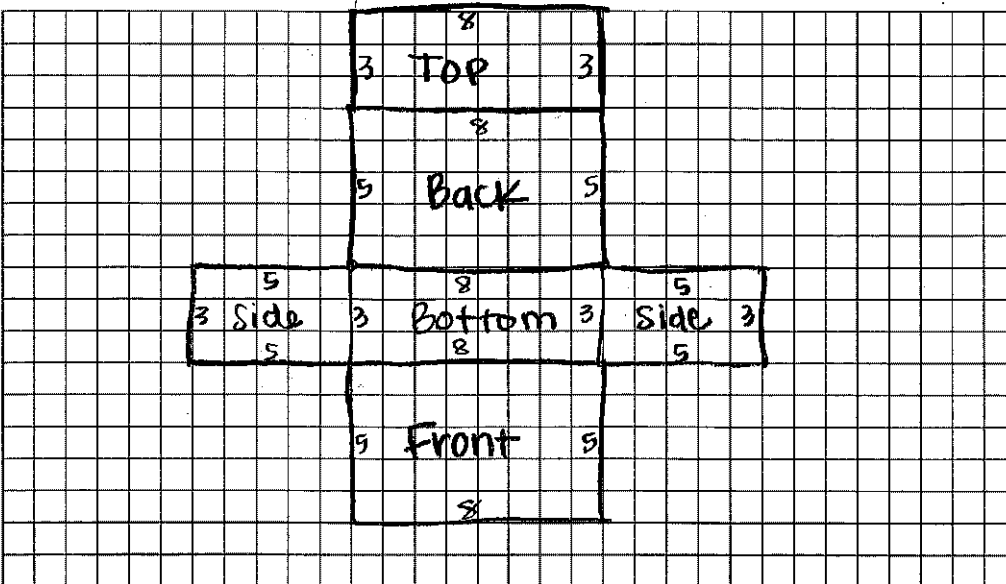
Create the net in the area below. Label the dimensions. Then find the surface area.



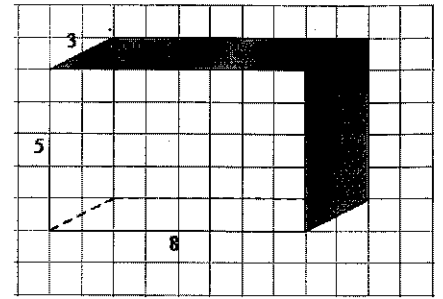
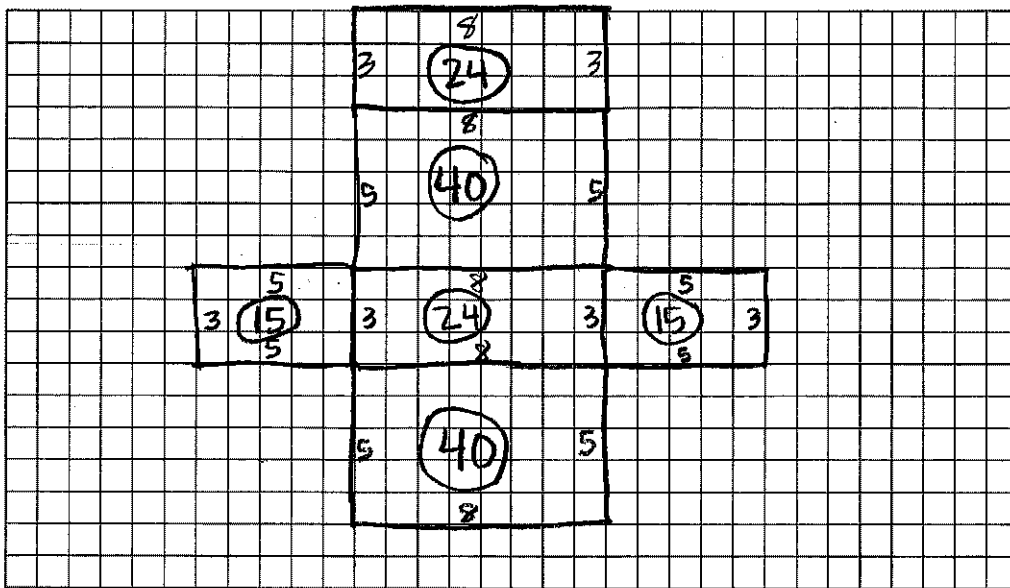
Create the net in the area below. Label the dimensions. Then find the surface area.



Create the net in the area below. Label the dimensions. Then find the surface area.



Now that the net is completed, find the area of each surface. Then add the values together to find the total surface area.



Front / Back :

$$A = bh$$

$$A = 8 \cdot 5$$

$$A = 40 \text{ un}^2$$

Bottom / Top :

$$A = bh$$

$$A = 8 \cdot 3$$

$$A = 24 \text{ un}^2$$

Sides :

$$A = bh$$

$$A = 5 \cdot 3$$

$$A = 15 \text{ un}^2$$

Add all values :

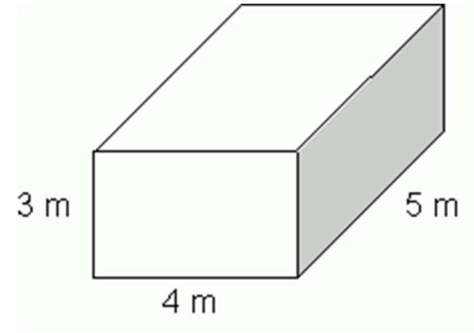
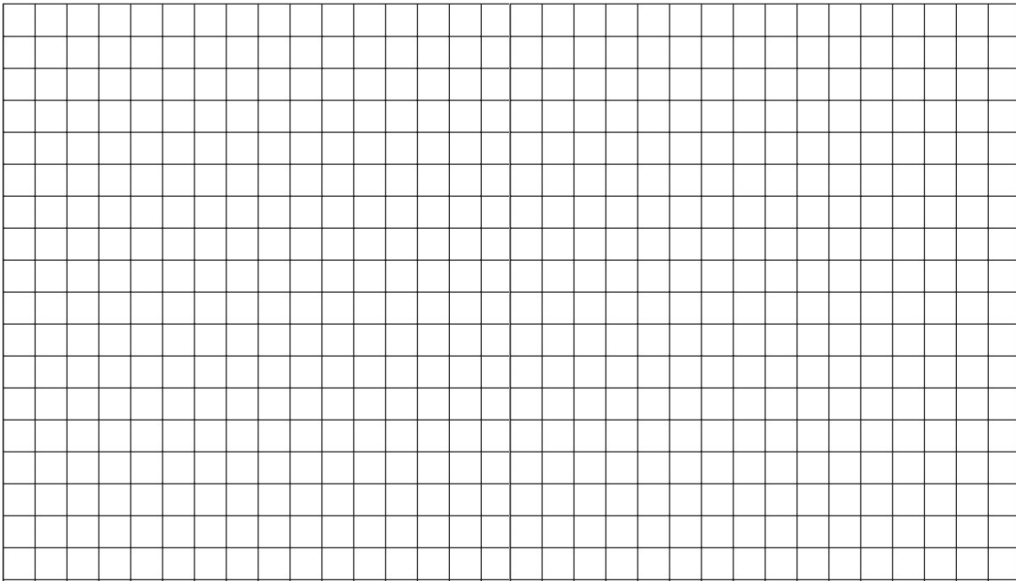
$$40 + 40 + 24 + 24 + 15 + 15$$

$$80 + 48 + 30$$

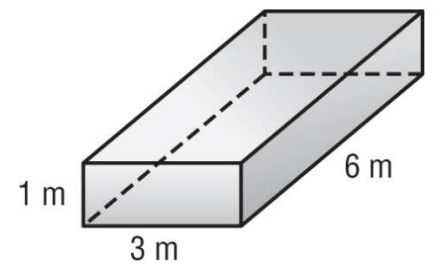
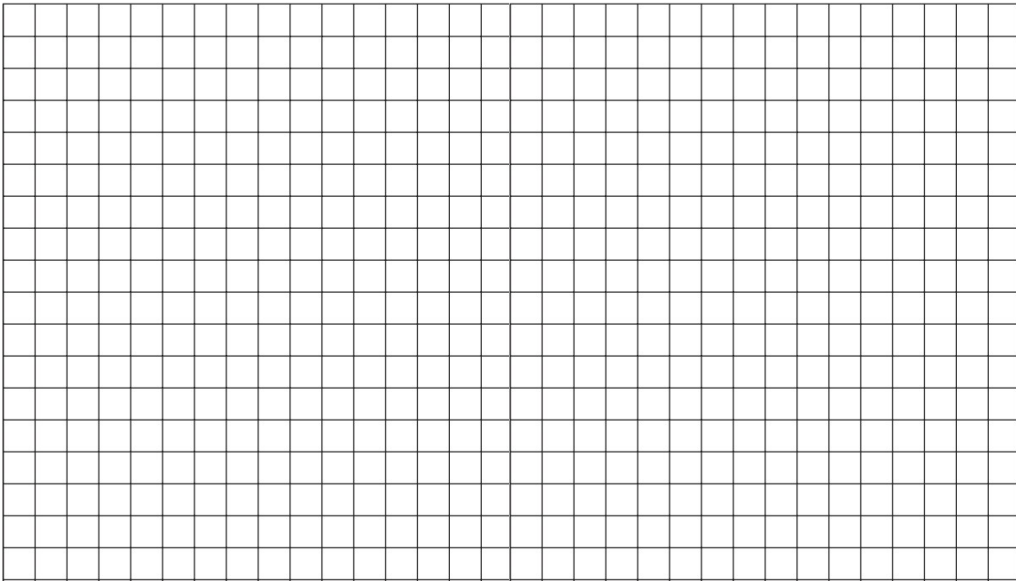
Surface Area: 158 un^2

Create the net in the area below. Label the dimensions. Then find the surface area.

1.

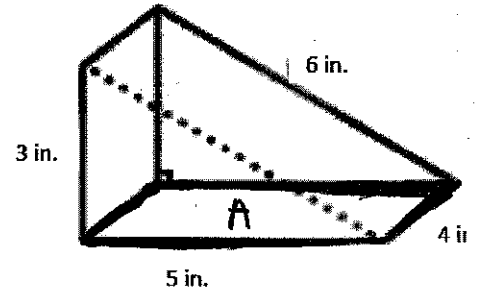
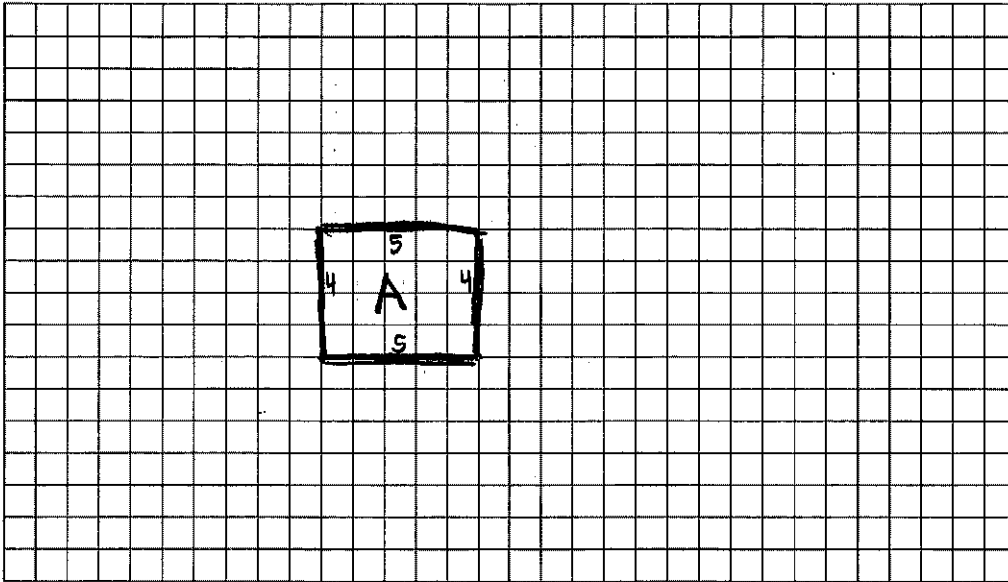


2.

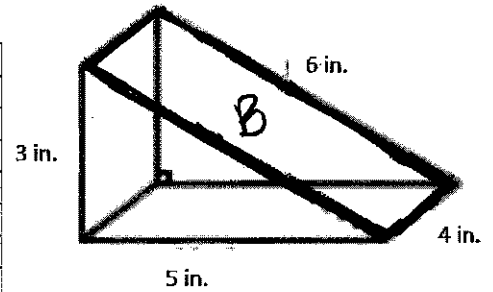
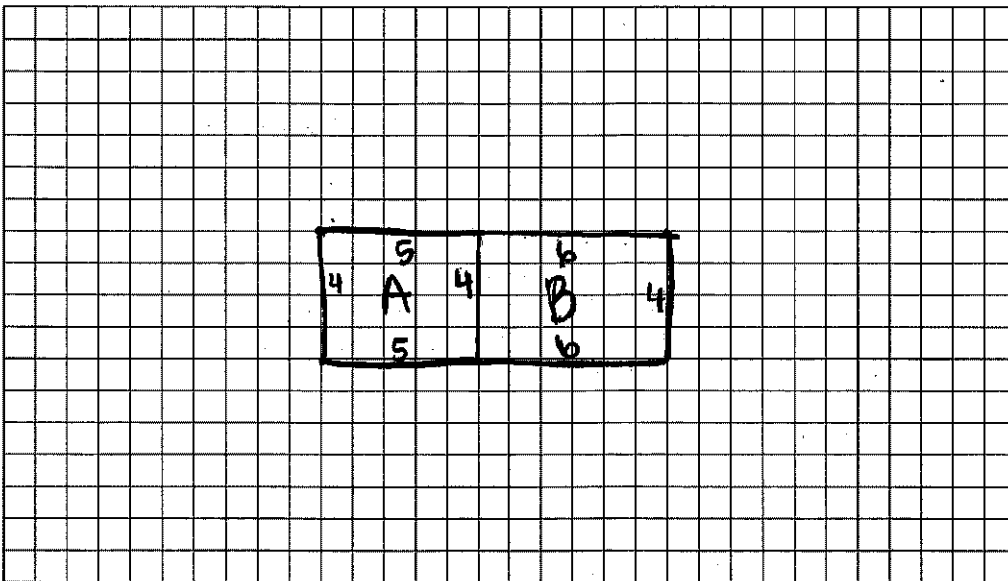


Step-by-Step Guide to finding surface area of a Triangular Prism as demonstrated in the video.

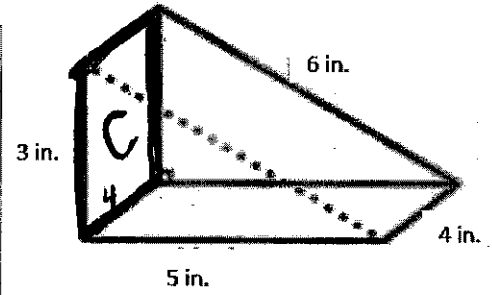
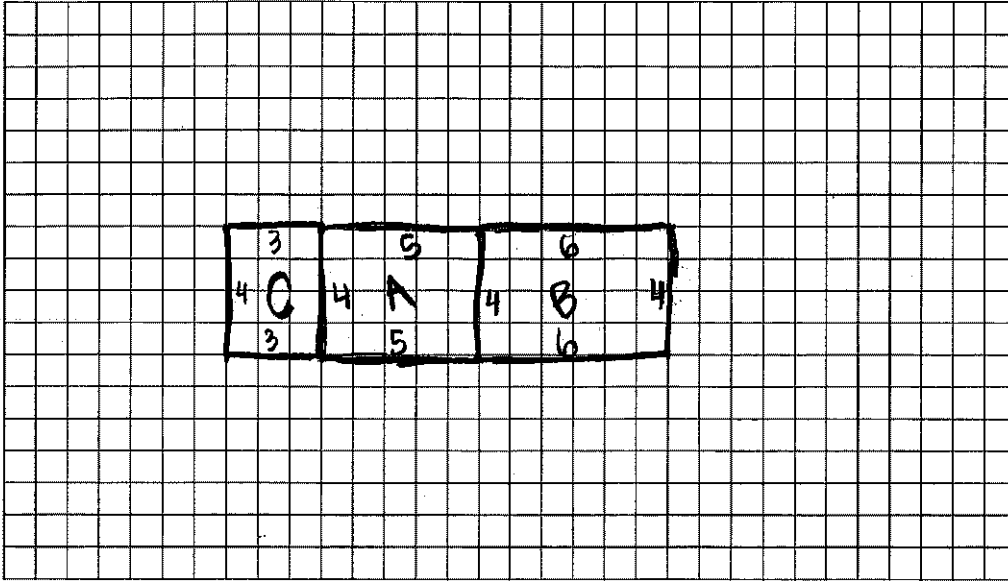
Create the net in the area below. Label the dimensions. Then find the surface area.



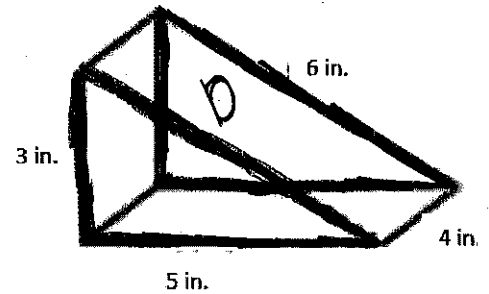
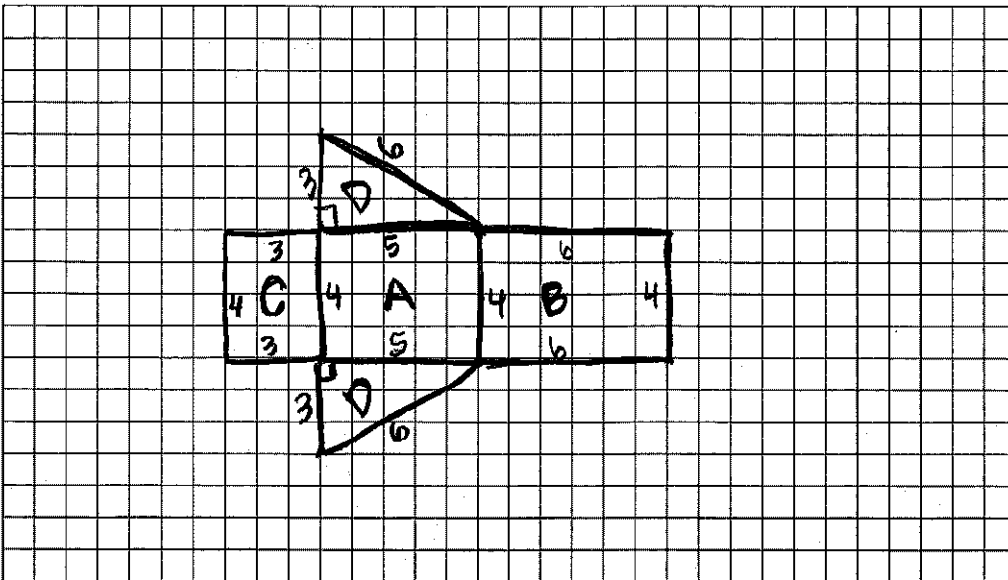
Create the net in the area below. Label the dimensions. Then find the surface area.



Create the net in the area below. Label the dimensions. Then find the surface area.

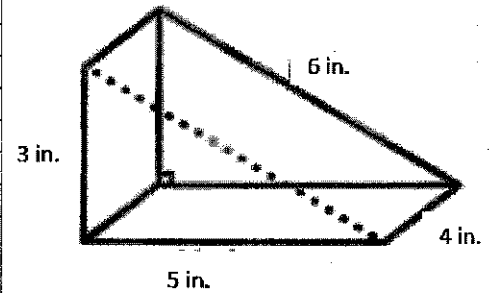
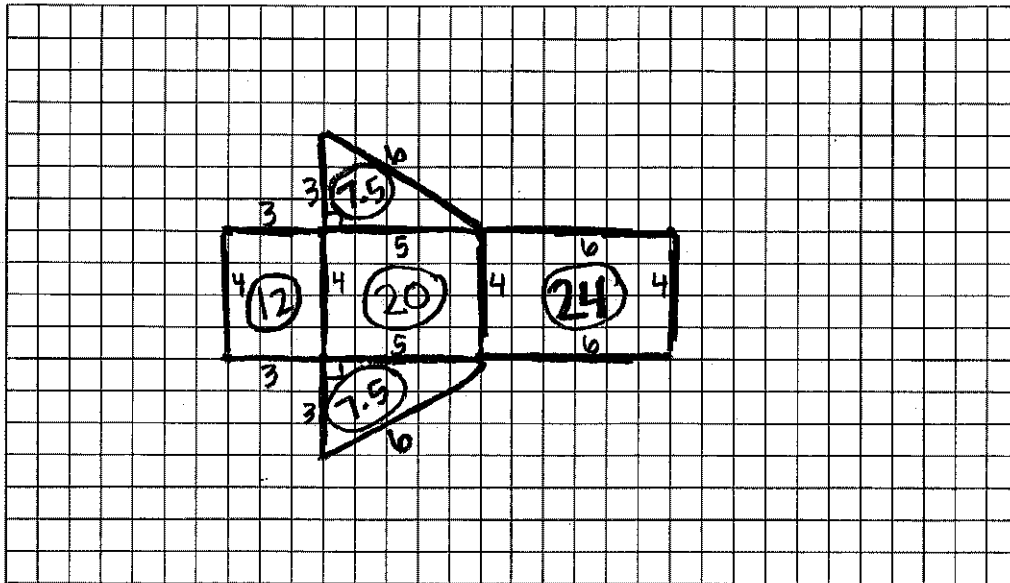


Create the net in the area below. Label the dimensions. Then find the surface area.



The triangles are always the same.

Now that the net is completed, find the area of each surface. Then add the values together to find the total surface area.



$$\begin{aligned}
 A : \quad & A = bh \\
 & A = 5 \times 4 \\
 & A = 20 \text{ un}^2
 \end{aligned}$$

$$\begin{aligned}
 B : \quad & A = bh \\
 & A = 6 \times 4 \\
 & A = 24 \text{ un}^2
 \end{aligned}$$

$$\begin{aligned}
 C : \quad & A = bh \\
 & A = 3 \times 4 \\
 & A = 12 \text{ un}^2
 \end{aligned}$$

To find the area of a triangle, you must use the lengths that form a right angle.

$$\begin{aligned}
 D : \quad & A = bh \div 2 \quad * \text{remember, the } \underline{\text{two}} \text{ triangles} \\
 & A = 5 \times 3 \div 2 \quad \text{are the same.} \\
 & A = 15 \div 2 \\
 & A = 7.5 \text{ un}^2
 \end{aligned}$$

Add all values: $12 + 20 + 24 + 7.5 + 7.5$

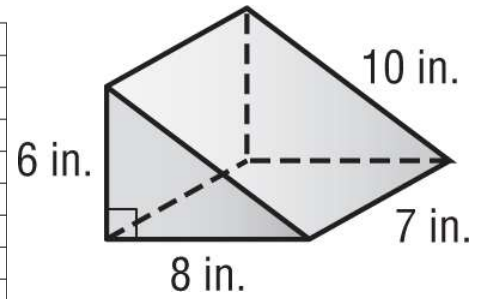
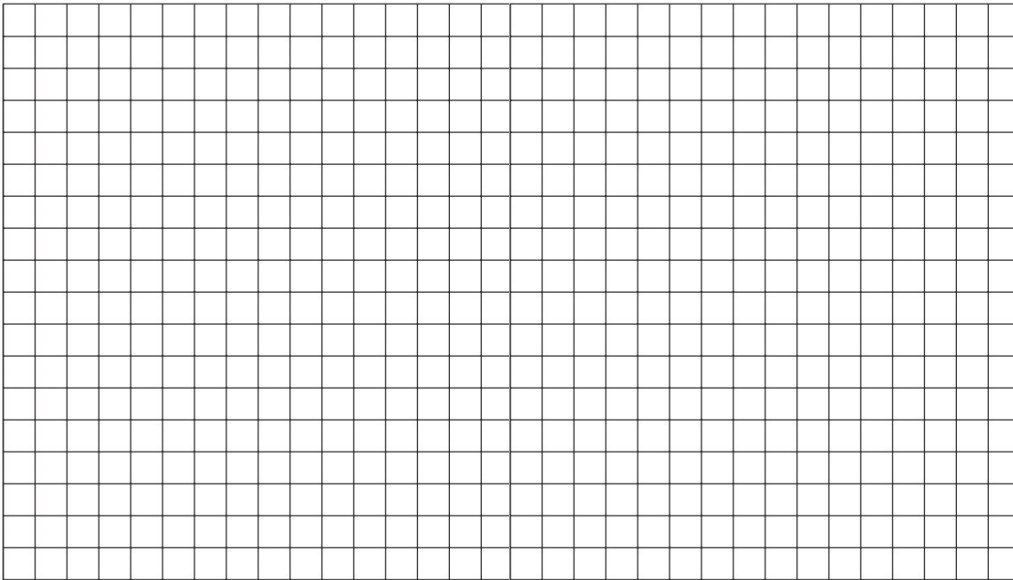
$$\boxed{\text{Surface Area: } 71 \text{ un}^2}$$

Triangular Prism Worksheet

Name _____

Create the net in the area below. Label the dimensions. Then find the surface area.

1.



2.

