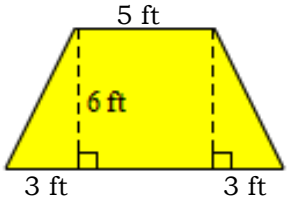
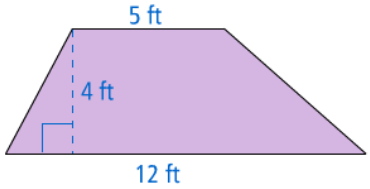
An Overview of Area

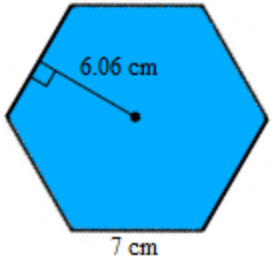
1N. Find the area of the trapezoid.



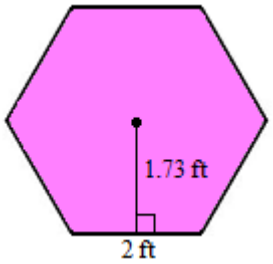
1H. Find the Area of the trapezoid.



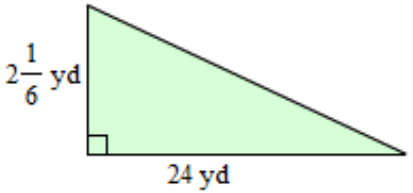
1N. Find the area of the hexagon.



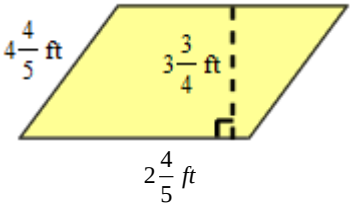
2H. Find the Area of the hexagon.



3N. Find the area of the triangle.



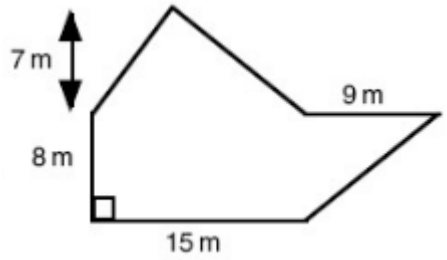
3H. Find the area of the parallelogram.



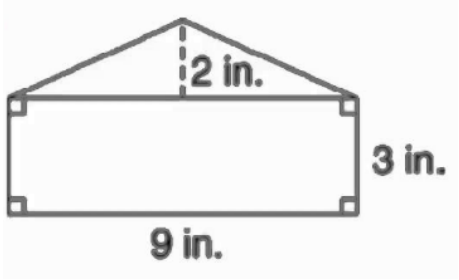
4N. Find the base of a parallelogram as a fraction in simplest form if the area of the parallelogram is 24 ft^2 and the height is $2\frac{2}{3}$ ft.

4H. Find the base of a rectangle if the area is 10 cm^2.

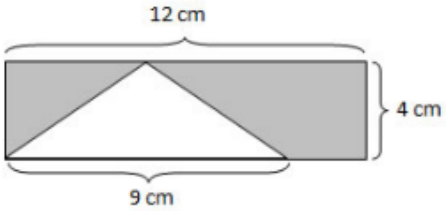
5N. The area of the polygon.



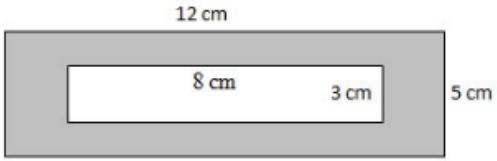
5H. Find the area of the polygon.



6N. The area of the shaded region.



6H. Find the area of the shaded region.

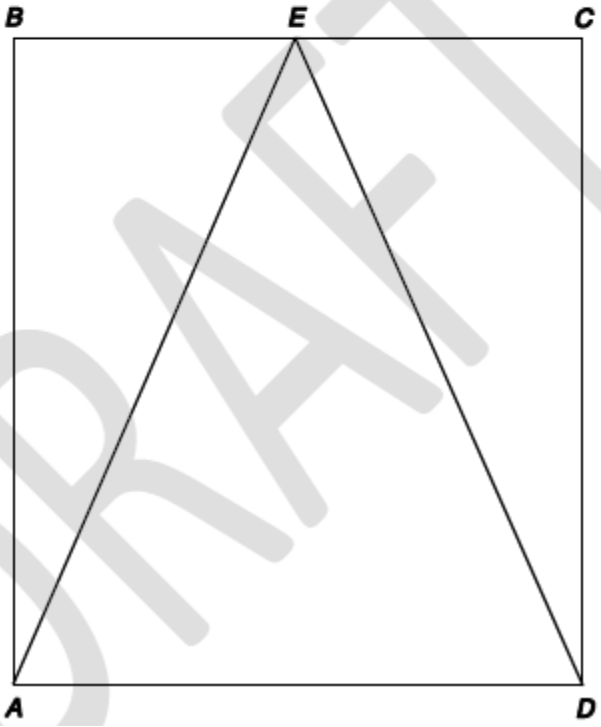


11 Triangle *ADE* is inside rectangle *ABCD*. Point *E* is halfway between points *B* and *C* on the rectangle. Side *AB* is 8 cm and side *AD* is 7 cm.

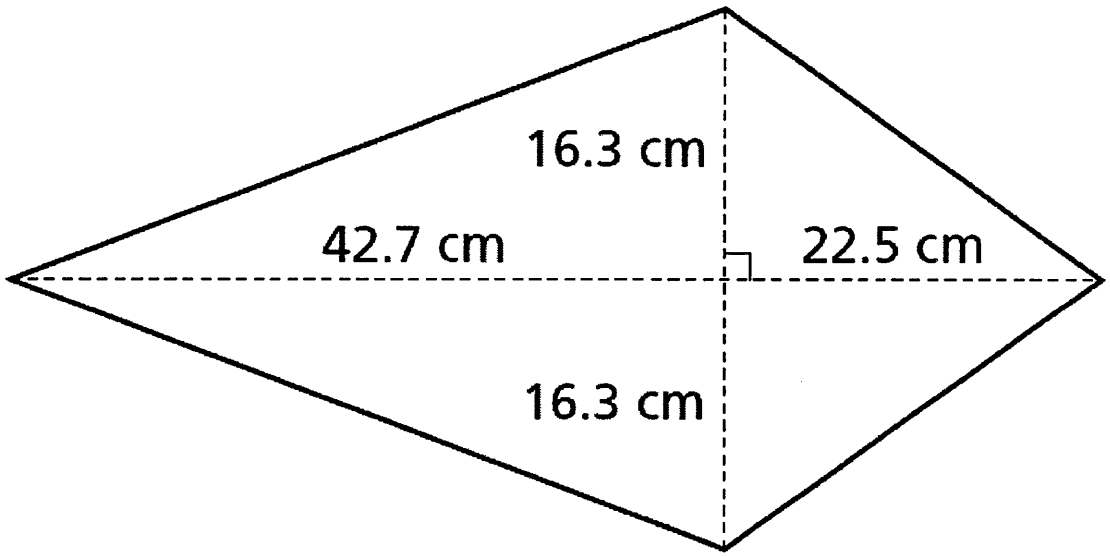
Part A: What is the area of triangle *ADE*? **Show your work.**

Part B: What is the ratio of the area of triangle *ABE* to the area of triangle *ADE*?

Part C: What is the ratio of the area of triangle *CDE* to the area of rectangle *ABCD*?

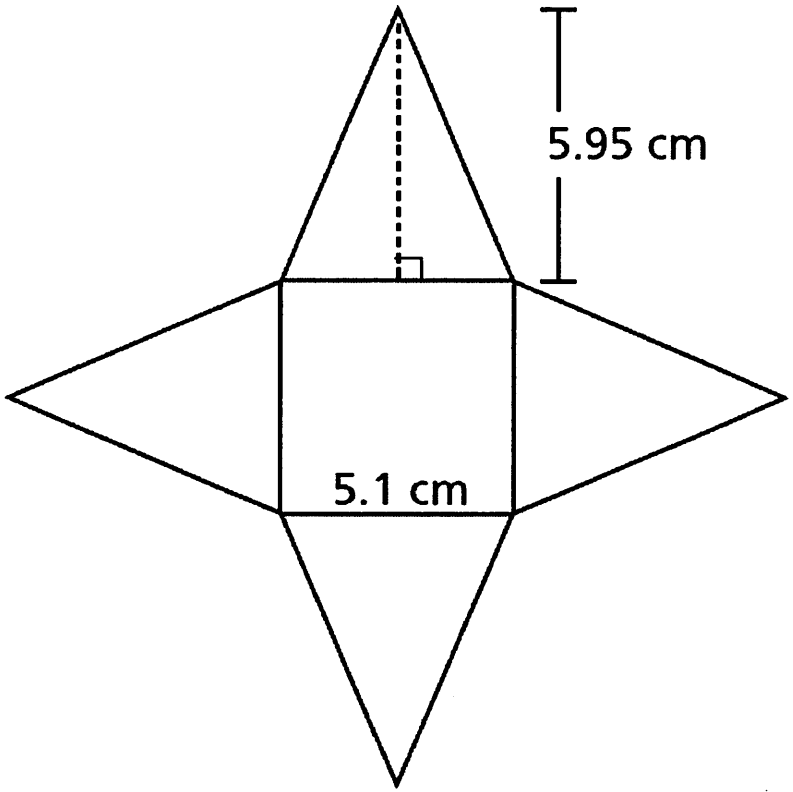


Noah wants to make the kite shown below out of cloth.



He wants to determine how much cloth he needs. What is the area, rounded to the nearest square centimeter, of Noah's kite?

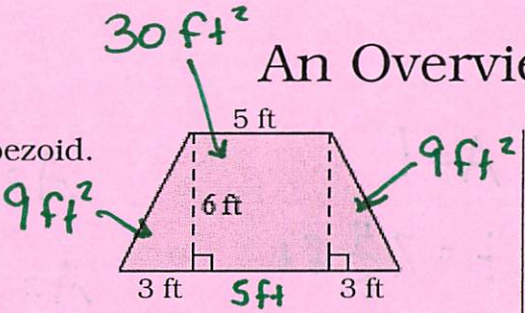
A net of a square pyramid is shown below.



What is the surface area, in square centimeters, of the pyramid?

An Overview of Area

1N. Find the area of the trapezoid.



$A = ?$

$b_1 = 5$ ft

$b_2 = 11$ ft

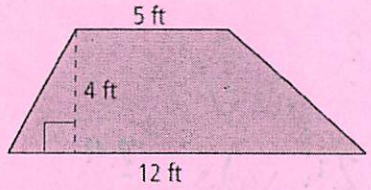
$h = 6$ ft

$A = \frac{h \cdot (b_1 + b_2)}{2}$

$A = \frac{6 \cdot (5 + 11)}{2}$

$A = \frac{6 \cdot 16}{2} = 48 \text{ ft}^2$

1H. Find the Area of the trapezoid.



$A = ?$

$b_1 = 5$ ft

$b_2 = 12$ ft

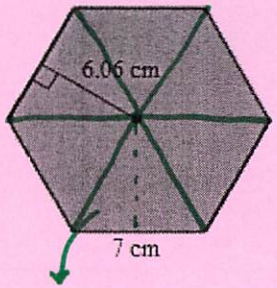
$h = 4$ ft

$A = \frac{h \cdot (b_1 + b_2)}{2}$

$A = \frac{4 \cdot (5 + 12)}{2}$

$A = \frac{4 \cdot 17}{2} = 34 \text{ ft}^2$

1N. Find the area of the ~~trapezoid~~ hexagon.



Find Area of 1 Δ and x 6

$A = ?$

$b = 7$ cm

$h = 6.06$ cm

$A = \frac{b \cdot h}{2}$

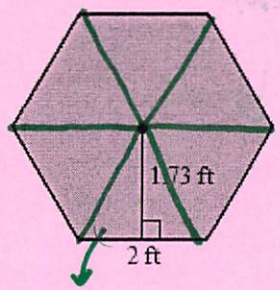
$A = \frac{7 \cdot 6.06}{2}$

$A = 21.21 \text{ cm}^2$

x 6

Total Area 127.26 cm^2

2H. Find the Area of the hexagon.



$A = ?$

$b = 2$ ft

$h = 1.73$ ft

$A = \frac{b \cdot h}{2}$

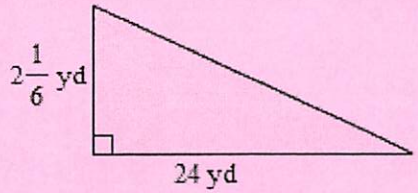
$A = \frac{2 \cdot 1.73}{2}$

$A = 1.73 \text{ ft}^2$

x 6

Total Area $= 10.38 \text{ ft}^2$

3N. Find the area of the triangle.



$A = ?$

$b = 24$ yds $\frac{24}{1}$

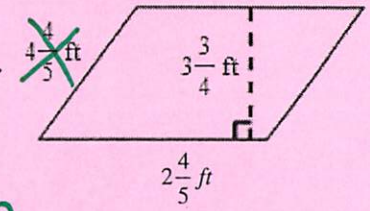
$h = 2\frac{1}{6}$ yds $\frac{13}{6}$

$A = \frac{{}^{4}\cancel{24}}{1} \cdot \frac{13}{\cancel{6}_{1}} \div 2$

$A = \frac{52}{2}$

$A = 26 \text{ yd}^2$

3H. Find the area of the parallelogram.



$A = ?$

$b = 2\frac{4}{5}$ ft

$h = 3\frac{3}{4}$ ft

$A = b \cdot h$

$A = 2\frac{4}{5} \cdot 3\frac{3}{4}$

$A = \frac{{}^{7}\cancel{14}}{{}_{1}\cancel{5}} \cdot \frac{\cancel{15}^{3}}{\cancel{4}_{2}} = \frac{21}{2}$

$A = 10\frac{1}{2} \text{ ft}^2$

4N. Find the base of a parallelogram as a fraction in simplest form if the area of the ~~rectangle~~ parallelogram is 24 ft² and the height is $2\frac{2}{3}$ ft.

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

$b = ?$

$h = 2\frac{2}{3}$ ft

$A \div h = b$

$24 \div 2\frac{2}{3}$

$\frac{24}{1} \div \frac{8}{3}$

$\frac{{}^{3}\cancel{24}}{1} \cdot \frac{3}{\cancel{8}_{1}} = \frac{9}{1}$

Base = 9 ft

4H. Find the base of a rectangle if the area is 10 cm².

$A = 10 \text{ cm}^2$

$b = ?$

$h = \frac{4}{5}$ cm

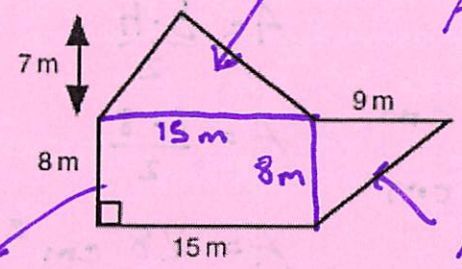
$A \div h = b$

$10 \div \frac{4}{5} = b$

$\frac{{}^{5}\cancel{10}}{1} \cdot \frac{5}{\cancel{4}_{2}} = \frac{25}{2}$

Base $= 12\frac{1}{2}$ cm

5N. The area of the polygon.



$A = \frac{b \cdot h}{2}$ $A = \frac{15 \cdot 7}{2}$

$A = 52.5\ m^2$

$A = b \cdot h$

$A = 8 \cdot 15$

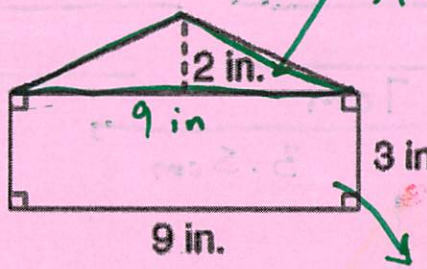
$A = 120\ m^2$

$A = \frac{b \cdot h}{2}$

$A = \frac{9 \cdot 8}{2} = 36 m^2$

Total Area = $208.5\ m^2$

5H. Find the area of the polygon.



$A = \frac{b \cdot h}{2}$

$A = \frac{9 \cdot 2}{2}$ $A = 9\ in^2$

$A = b \cdot h$

$A = 9 \cdot 3$

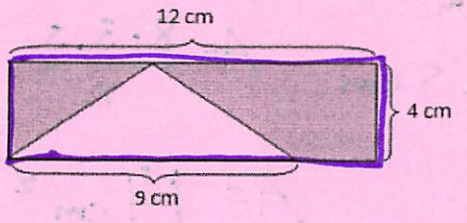
$A = 27\ in^2$

Total Area

$9\ in^2 + 27\ in^2$

$36\ in^2$

6N. The area of the shaded region.



Rectangle

$A = ?$

$b = 12\ cm$

$h = 4\ cm$

$A = b \cdot h$

$A = 12 \cdot 4$

$A = 48\ cm^2$

—

Triangle

$A = ?$

$b = 9\ cm$

$h = 4\ cm$

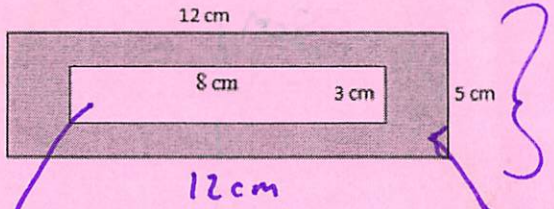
$A = \frac{b \cdot h}{2}$

$A = \frac{9 \cdot 4}{2}$

$A = 18\ cm^2$

Shaded Area = $48 - 18 = 30\ cm^2$

6H. Find the area of the shaded region.



$A = b \cdot h$

$A = 8 \cdot 3$

$24\ cm^2$

$A = b \cdot h$

$A = 12 \cdot 5$

$A = 60\ cm^2$

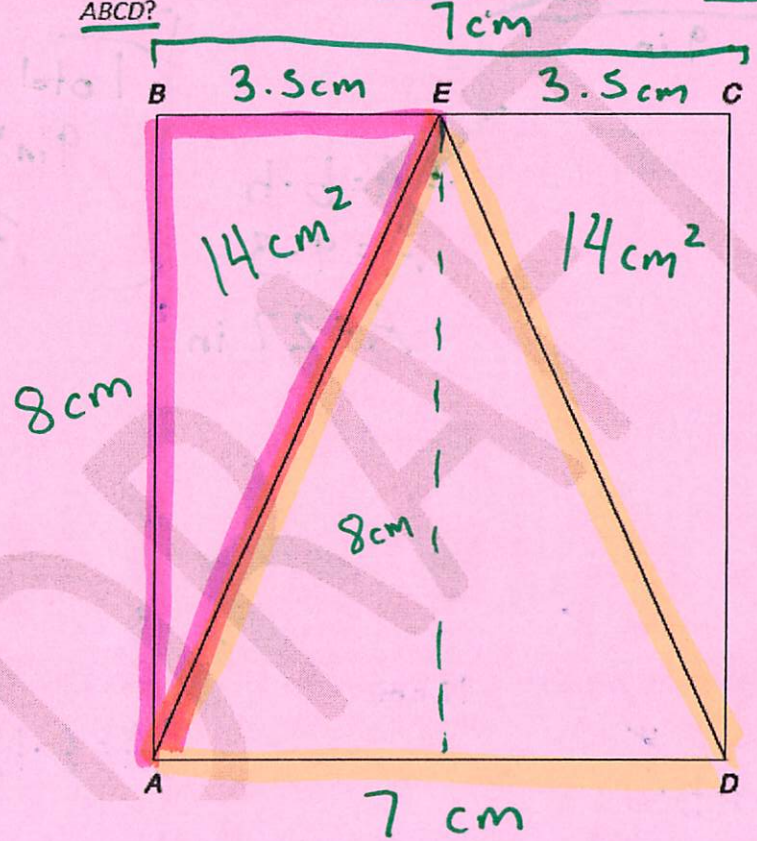
Area of Shaded = $60\ cm^2 - 24\ cm^2 = 36\ cm^2$

11 Triangle *ADE* is inside rectangle *ABCD*. Point *E* is halfway between points *B* and *C* on the rectangle. Side *AB* is 8 cm and side *AD* is 7 cm.

Part A: What is the area of triangle *ADE*? Show your work.

Part B: What is the ratio of the area of triangle *ABE* to the area of triangle *ADE*?

Part C: What is the ratio of the area of triangle *CDE* to the area of rectangle *ABCD*?



Part A:

A = ?

b = 7 cm

h = 8 cm

$A = \frac{b \cdot h}{2}$

$A = \frac{7 \cdot 8}{2}$

$A = 28\ cm^2$

Part B:

A = ?

b = 8 cm

h = 3.5 cm

$A = \frac{b \cdot h}{2}$

$A = \frac{8 \cdot 3.5}{2}$

$A = 14\ cm^2$

1 : 2 ratio

Part C:

14 : 56

1 : 4 ratio

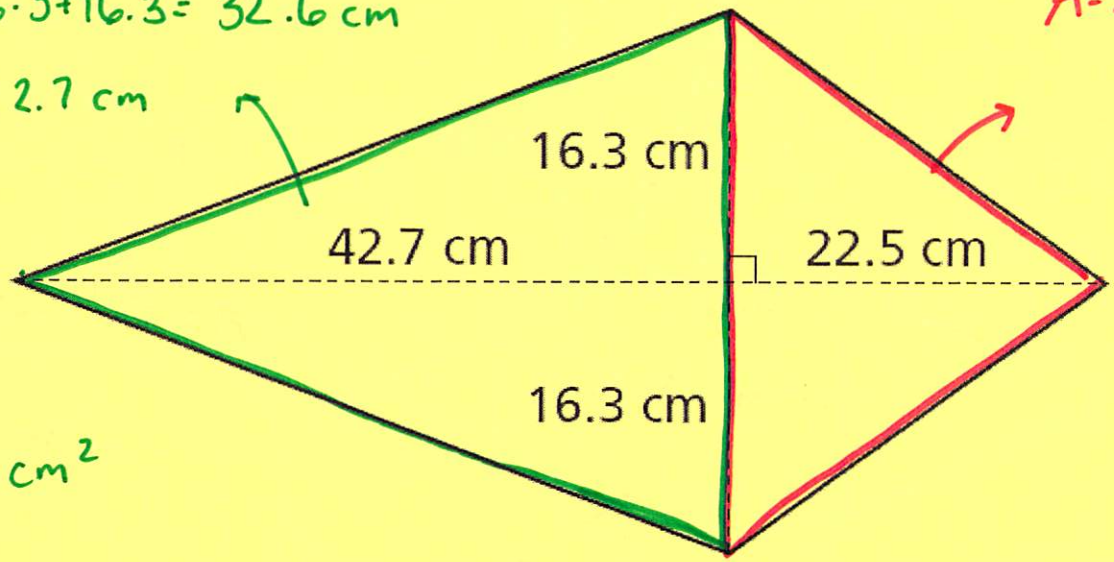
Noah wants to make the kite shown below out of cloth.

$A = \frac{b \cdot h}{2}$ $b = 16.3 + 16.3 = 32.6$ cm

$h = 42.7$ cm

$A = \frac{32.6 \cdot 42.7}{2}$

$A = 696.01$ cm^2



$A = \frac{b \cdot h}{2}$ $b = 16.3 + 16.3 = 32.6$ cm

$h = 22.5$ cm

$A = \frac{32.6 \cdot 22.5}{2}$

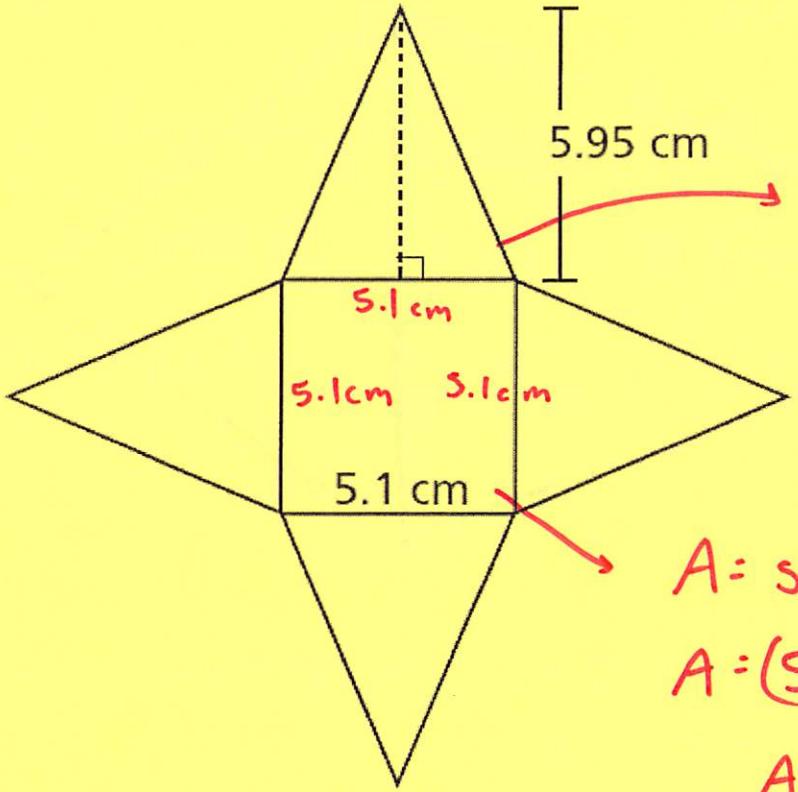
$A = 366.75$ cm^2

He wants to determine how much cloth he needs. What is the area, rounded to the nearest square centimeter, of Noah's kite?

Total Area = 696.01 cm^2 + 366.75 cm^2

1062.76 cm^2 $\approx$ 1063 cm^2

A net of a square pyramid is shown below.



$A = \frac{b \cdot h}{2}$

$A = \frac{5.1 \cdot 5.95}{2}$

$A = 15.1725$

$\times 4 \Delta$'s

$60.69\ cm^2$

$A = s^2$

$A = (5.1)^2$

$A = 26.01\ cm^2$

What is the surface area, in square centimeters, of the pyramid?

Total Area

$$\begin{array}{r} 60.69 \\ +\ 26.01 \\ \hline 86.7\ cm^2 \end{array}$$