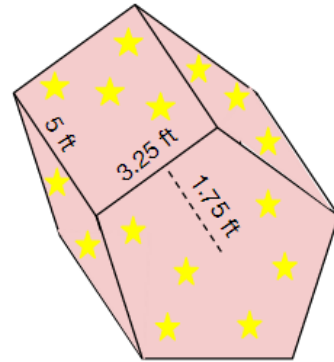**Find the surface area of a pentagonal prism by finding the area of a 2D net, Practice Set C**

Name:

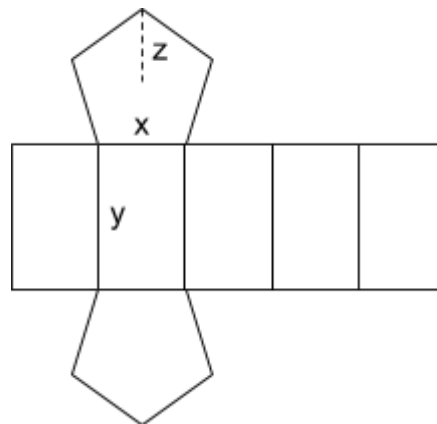Date:

1. Matthew is wrapping a birthday gift for his brother. He has 100 ft² of wrapping paper. Will that be enough?

2. The regular pentagonal prism has a surface area of 3,485 in². Determine the value for s.

3. Determine the values of x, y, and z that could be a regular pentagonal prism with a surface area between 2,000 in² and 3,000 in². Find three possibilities.

Find the surface area of a pentagonal prism by finding the area of a 2D net, Practice Set C
Answer Key

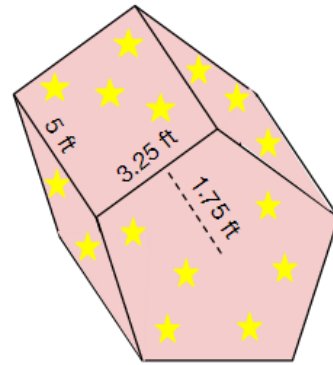1. Matthew is wrapping a birthday gift for his brother. He has 100 ft² of wrapping paper. Will that be enough? No, it will not be enough because Matthew will need about 110 ft².
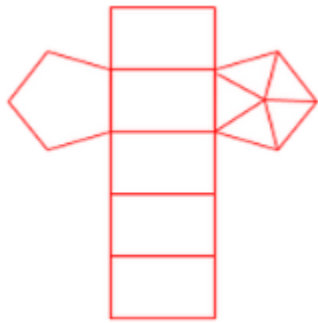
Area of rectangle = (5 ft)(3.25 ft)= 16.25 ft²

Area of triangle = ½bh = ½(3.25 ft)(1.75 ft) = 2.84375 ft²

Surface area = 5(16.25 ft²) + 10(2.84375 ft²) = 109.6875 ft²

2. The regular pentagonal prism has a surface area of 3,485 in². Determine the value for s. s = 16 in

Surface area = 5(area of rectangle) + 10(area of pentagon)

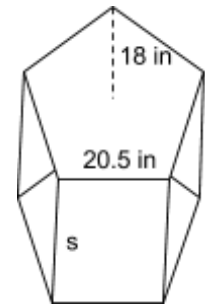*3,485 in² = 5(20.5 in x s)+10(½ x 20.5 in x 18 in)*

3,485 in² = 5(20.5 in x s)+1,845 in²

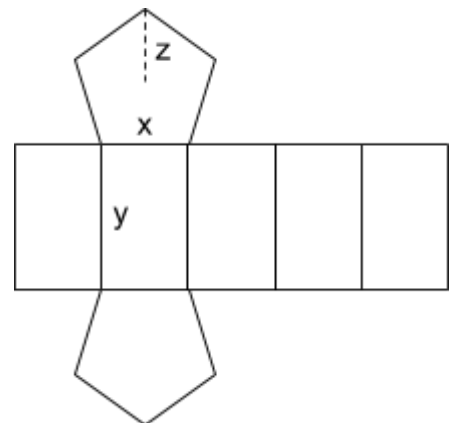*1,640 in² = 5(20.5 in x s)*

328 in² = 20.5 in x s

16 in = s

3. Determine the values of x, y and z that could be a regular pentagonal prism with a surface area between 2,000 in² and 3,000 in². Find three possibilities.

Answers will vary. Examples below:

Possibility 1   *Possibility 2*   *Possibility 3*

x = 18 in   *x = 17 in*   *x= 16 .5 in*

y= 16 in   *y = 22 in*   *y= 15.2 in*

z= 8 in   *z = 10 in*   *z = 12.75 in*

SA =2080 in²   *SA =2970 in²*   *SA = 2223 in²*