Geometric Probability Notes and Activity

Open the GSP5 sketch so that you are on the page entitled circles.

1. What is the name of the radius shown for the inner circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the name of the radius shown for the middle circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What is the name of the radius shown for the outer circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Using the hide/show buttons find the following areas.

1. Area of the inner circle \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Area of the middle circle \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Area of the outer circle \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Discuss within your groups what is probability and how might it look in geometric relationships. Record your thoughts here:

Geometric Probability and Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Return to the circles sketch. Find the following probabilities. Be sure to record your work and answers. Answers should be given as a percentage.

1. The probability of a point landing in the inner circle interior (green). \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The probability of a point landing in the outer circle interior only (gray). \_\_\_\_\_\_\_\_\_\_\_\_\_
3. The probability of a point landing on the middle circle or inner circle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Open the next page, Square and Circle.

Discuss the similarities and differences between figure 1 and figure 2. What do inscribed and circumscribed mean? Record your thoughts here:

Be sure to record your work and answers. Answers should be given as a percentage.

Use figure 1 for the following:

1. The probability of a point landing in the circle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The probability of a point landing in the square. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What do you notice about these probabilities? Does it work for any such sketch?

Use figure 2 for the following:

1. The probability of a point landing in the square. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The probability of a point landing in the circle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Discuss the two figures. Record your observations here:

Use the Inscribed Hexagon for the following:

1. The probability of a point landing in the hexagon. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The probability of a point landing in the circle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the Inscribed Pentagon for the following:

1. The probability of a point landing in the pentagon. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The probability of point landing in the circle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now open page entitled Student.

What geometric shapes make up this figure?

Discuss the relationships between dimensions.

Find at least 3 probabilities for this figure. Be sure to write the problem, show the work, and the answer should be in percentage form.