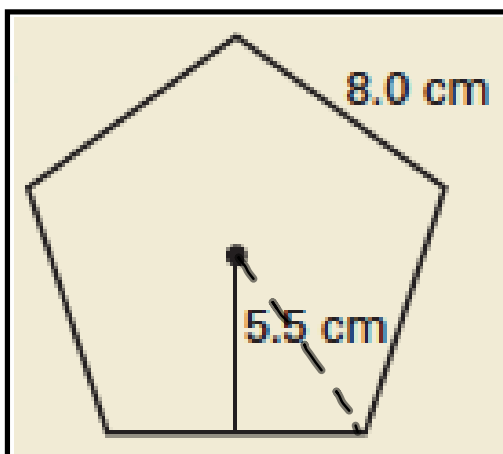


**Bellwork**  
**04/25/12**

Find the area of the regular polygon.

1.



$$P = 8 \cdot 5 = 40$$

$$A = \frac{1}{2} a P$$
$$A = \frac{1}{2} (5.5) (40)$$
$$A = 110 \text{ cm}^2$$

## Geometry

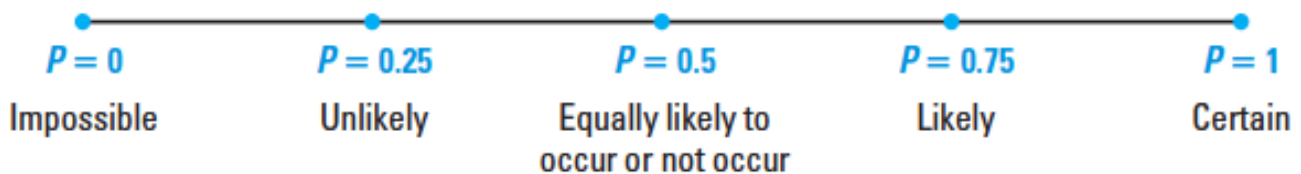
### 11.7 Geometric Probability

#### Standard(s): 5

### Vocabulary:

**Probability:** Measure of the likelihood that an event will occur.

*Note: probability is expressed between 0 and 1 and can be expressed as a fraction, decimal, or percent.*



**Geometric Probability:** A ratio that involves a geometric measure such as length or area.

#### KEY CONCEPT

#### *For Your Notebook*

##### Probability and Length

Let  $\overline{AB}$  be a segment that contains the segment  $\overline{CD}$ . If a point  $K$  on  $\overline{AB}$  is chosen at random, then the probability that it is on  $\overline{CD}$  is the ratio of the length of  $\overline{CD}$  to the length of  $\overline{AB}$ .



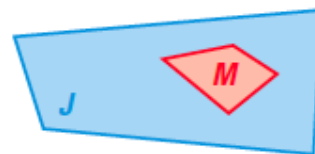
$$P(K \text{ is on } \overline{CD}) = \frac{\text{Length of } \overline{CD}}{\text{Length of } \overline{AB}}$$

#### KEY CONCEPT

#### *For Your Notebook*

##### Probability and Area

Let  $J$  be a region that contains region  $M$ . If a point  $K$  in  $J$  is chosen at random, then the probability that it is in region  $M$  is the ratio of the area of  $M$  to the area of  $J$ .



$$P(K \text{ is in region } M) = \frac{\text{Area of } M}{\text{Area of } J}$$

## Prob. Using a # Line

Find the probability that a point  $K$  selected randomly on  $\overline{AE}$ , is on the given segment. Express your answer as a fraction, decimal, and percent.

$$AE = 8 - 0 = 8$$



$\overline{AC}$

$$AC = 4 - 0 = 4$$

$$\frac{4}{8}$$

$$\frac{1}{2}$$

$$0.5$$

$$50\%$$

$\overline{BC}$

$$4 - 1 = 3$$

$$\frac{3}{8}$$

$$0.375$$

$$37.5\%$$

$\overline{CD}$

$$6 - 4 = 2$$

$$\frac{2}{8}$$

$$\frac{1}{4}$$

$$0.25$$

$$25\%$$

$\overline{AD}$

$$\frac{6 - 0}{8} = \frac{6}{8}$$

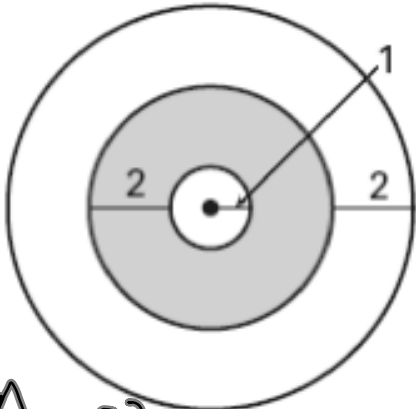
$$\frac{3}{4}$$

$$0.75$$

$$75\%$$

## Prob. Using Figures

Find the probability that a randomly chosen point in the figure lies in the shaded region.



$$A = 5^2 \pi = 25\pi$$

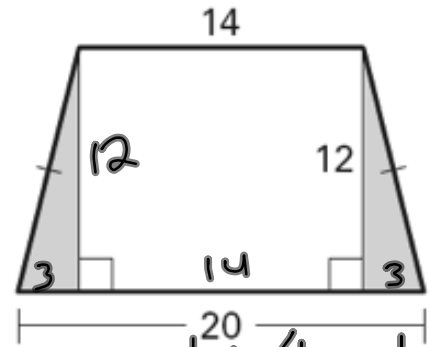
$$A = 3^2 \pi = 9\pi$$

$$1\pi = 1\pi$$

$$A = 8\pi$$

$$\frac{8\pi}{25\pi}$$

$$\frac{8}{25} = 32\%$$



$$A = \frac{1}{2} h (b_1 + b_2)$$

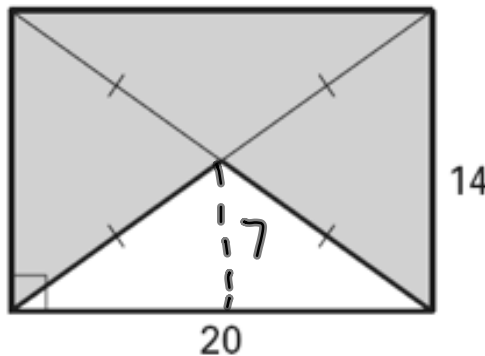
$$A = \frac{1}{2} (12)(14 + 20)$$

$$A = 204$$

$$A_0 = 12 \cdot 3 = 36$$

$$\frac{36}{204} = \frac{3}{17}$$

$$17.65\%$$



$$A = 20 \cdot 14 = 280$$

$$A = \frac{20 \cdot 7}{2} = 70$$

$$280 - 70 = 210$$

$$\frac{210}{280} = \frac{3}{4}$$

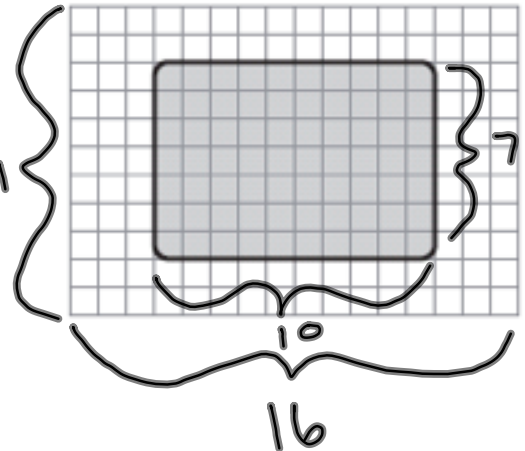
$$75\%$$

## Prob. Using Coordinate Grid

Use the scale drawing.

What is the approximate area of the shaded figure in the scale drawing. <sup>11</sup>

$$A = 10 \cdot 7 = 70 \text{ un}^2$$



Find the probability that a randomly chosen point lies in the shaded region.

$$A_T = 11 \cdot 16 = \frac{70}{176} = \frac{35}{88} \quad 39.77\%$$

Find the probability that a randomly chosen point lies outside the shaded region.

$$176 - 70 = 106$$

$$\frac{106}{176} = \frac{53}{88} \quad 60.23\%$$

## Game Spinner

Find the probability for each outcome on the game spinner shown.

Receive a free turn.  $\frac{90}{360} = \frac{1}{4}$

25%

Lose a turn.  $\frac{140}{360} = \frac{7}{18}$

38.89%

Receive 10 bonus pts.

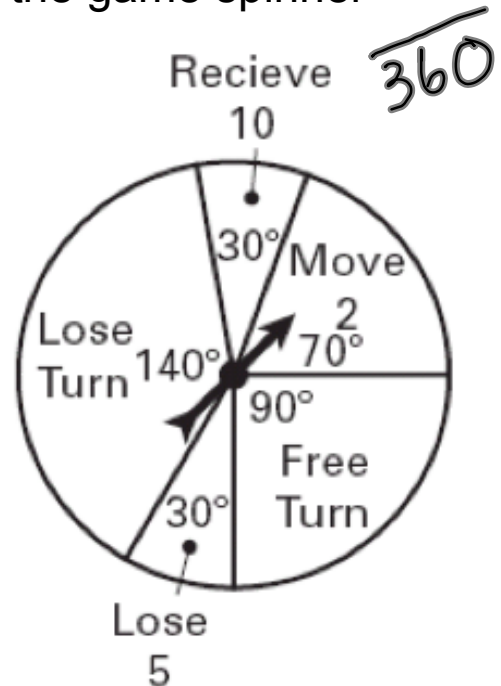
$\frac{30}{360} = \frac{1}{12}$  8.33%

Move forward 2 spaces.

$\frac{70}{360} = \frac{7}{36}$  19.44%

Lose 5 points.

$\frac{1}{12}$  8.33%



## Homework Assignment

**Pg. 774-775  
#3-6, 8-10, 12-14,  
20-22**

