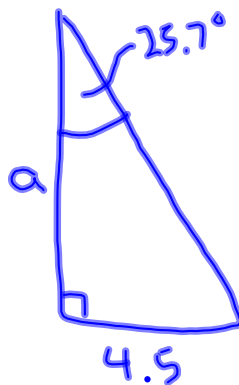
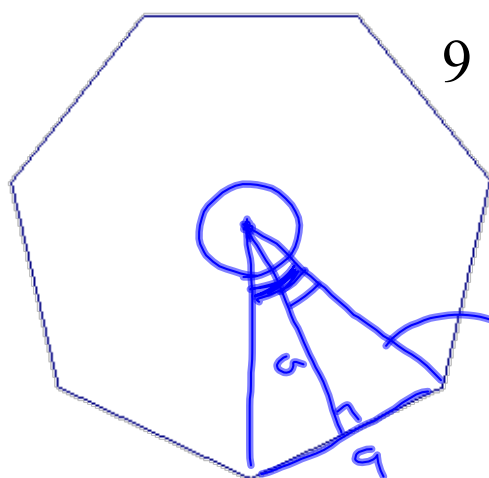


## Warm Up

$$\text{Perimeter} = 63$$

Find the perimeter and area of the regular polygon.



$$A = \frac{1}{2} \cdot a \cdot p$$

$$= \frac{1}{2} \cdot 9 \cdot 63$$

$$= 296.1$$

$$\tan 25.7^\circ = \frac{4.5}{a}$$

$$a = \frac{4.5}{\tan 25.7^\circ}$$

$$a \approx \underline{9.4}$$

## 11-7 Geometric Probability

Probability: A number between 0 and 1 (inclusive).  
It represents the likelihood that the event will occur.

Ex 1 Given a bag with 2 pink balls and 4 yellow balls, what is the probability that a randomly selected ball will be:

pink  $\frac{2}{6} = \frac{1}{3}$

yellow  $\frac{4}{6} = \frac{2}{3}$

blue 0

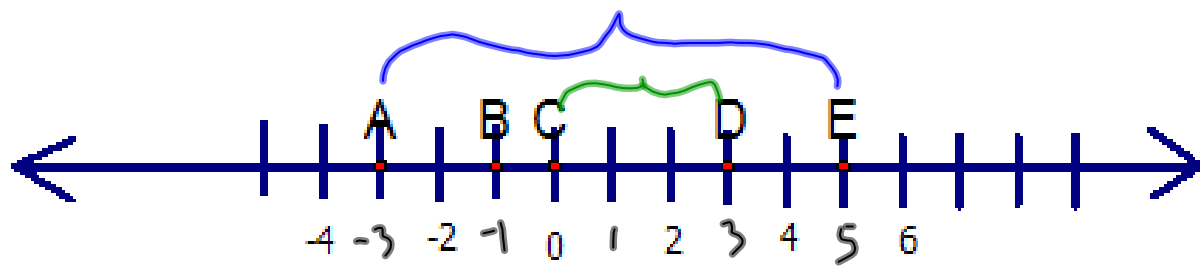
a ball 1

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

$$\text{Probability} = \frac{\text{select region}}{\text{entire region}}$$

Ex 2

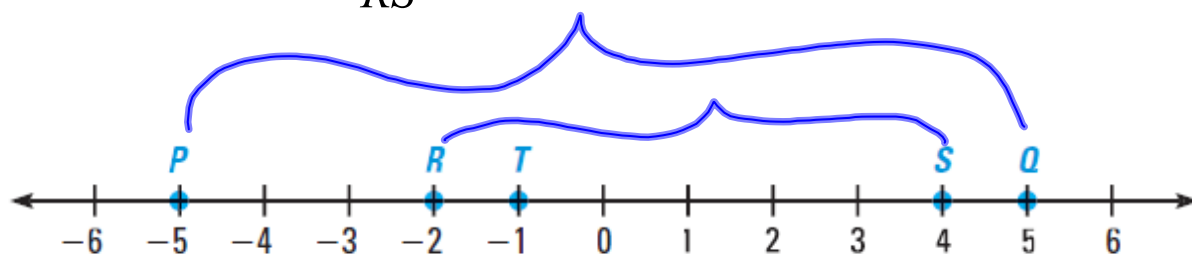
Find the probability that a point chosen at random on  $\overline{AE}$  is on  $\overline{CD}$



$$\frac{\overline{CD}}{\overline{AE}}$$

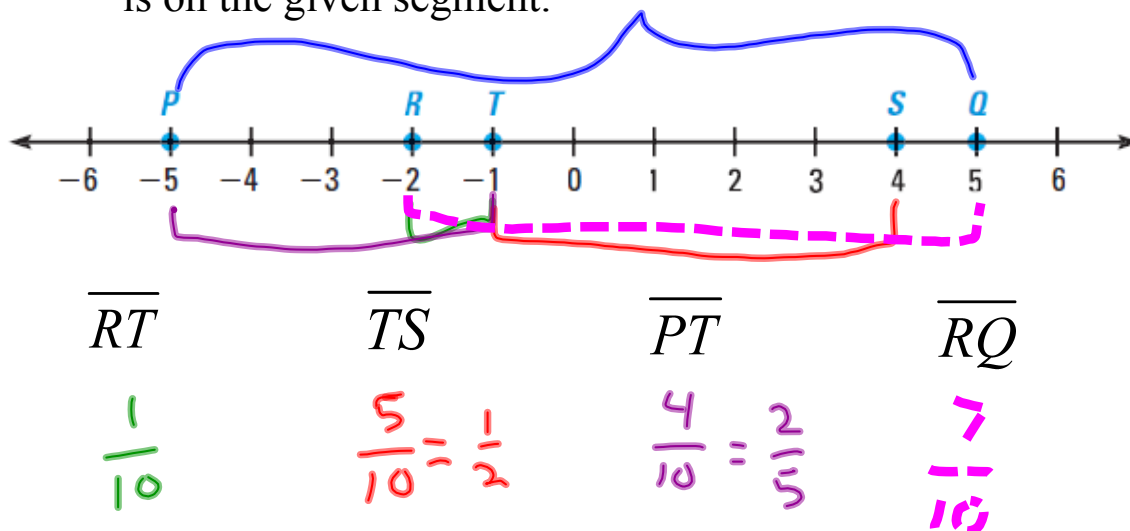
$$\frac{3}{8}$$

Ex. 3 Find the probability that a point chosen on  $\overline{PQ}$  is also on  $\overline{RS}$



$$\frac{6}{10} = \frac{3}{5}$$

Ex. 4 Find the probability that a point chosen at random on  $\overline{PQ}$  is on the given segment.



Ex 5 What is the probability that a randomly thrown dart that hits the dartboard also hits the bullseye? The rings are 2, 4, and 6 inches from the center.

$$A = \pi r^2 = \pi \cdot 2^2 = 4\pi$$

$$A = \pi r^2 = \pi \cdot 6^2 = 36\pi$$

$$\text{Prob.} = \frac{4\pi}{36\pi} = \frac{4}{36} = \frac{1}{9}$$

