

Example 3: Use the table that shows the college majors of the students who took the Medical College Admission Test (MCAT) in April 2000.

If a student taking the test were randomly selected, find each probability.

Please express answer as a rounded percent. (round to nearest tenth of a percent)

a.) P (math or statistics)

$$\frac{179}{25,405} = .0070458571 \quad \boxed{.7\%}$$

b.) P (biological sciences)

$$\frac{15,819}{25,405} = \boxed{62.3\%}$$

c.) P (social sciences or humanities)

$$\frac{2482 + 963}{25,405} = \frac{3445}{25,405} = \boxed{13.6\%}$$

Major	Students
biological sciences	15,819
humanities	963
math or statistics	179
physical sciences	2770
social sciences	2482
specialized health sciences	1431
other	1761

Total = 25,405

– **geometric probability** → represents the fraction of

$$\frac{\text{Area of desired outcome}}{\text{Area of total outcome}}$$

Common Area Formulas You SHOULD KNOW:

Area of Square → $A = s^2$ s-side

Area of Rectangle → $A = lw$ l-length w-width

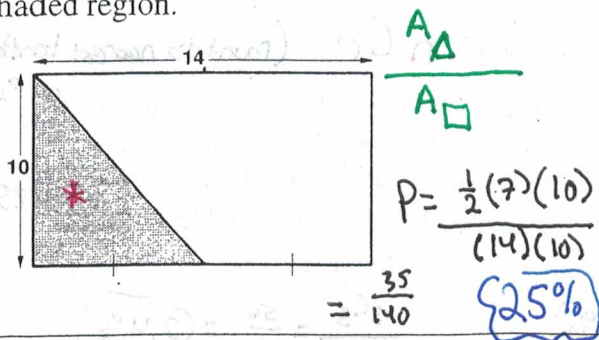
Area of Triangle → $A = \frac{1}{2}bh$ b-base h-height

Area of Circle → $A = \pi r^2$ r-radius

Example 4: Find the geometric probability for each given situation/diagram. Express as a percent.

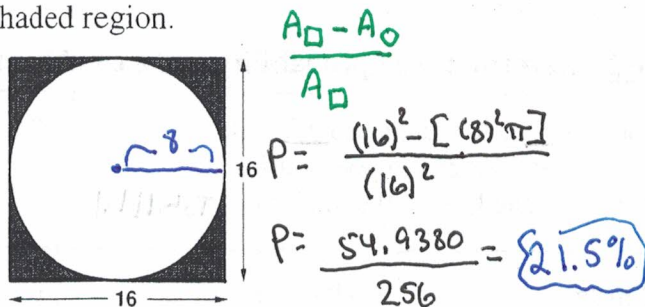
a.) A coin is thrown from a ladder.

Find the probability of the coin landing in the shaded region.

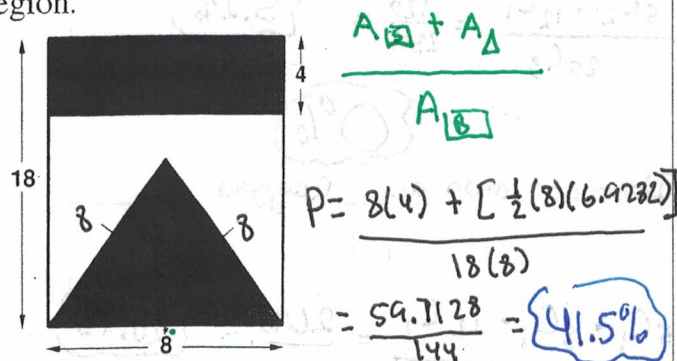


b.) A rock is thrown from a second story building.

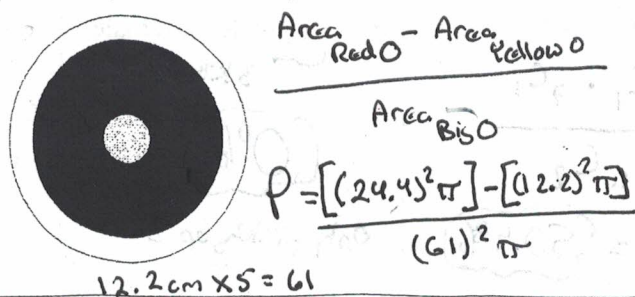
Find the probability of the rock landing in the shaded region.



c.) A dart is thrown at the dart board below. Find the probability that the dart landed in the shaded region.



d.) An archery target has 5 scoring zones formed by concentric circles. The radius of the yellow zone is 12.2 cm and the width of each ring is also 12.2 cm. If an arrow hits the target at a random point, what is the probability that it hits any area of the red zone?



12.2 cm x 5 = 61

r = 61 cm for Big O

$$P = \frac{1402.78}{11689.87} = \boxed{12\%}$$

Δ height
 $a^2 + b^2 = c^2$
 $a^2 + (4)^2 = (8)^2$
 $a^2 = 48$
 $a = 6.9282$