Warm Up Week 10 Tuesday

1. In how many ways can you arrange the letters of:

a) orange $6! = 720$

b) calculus $\dfrac{8!}{2! \cdot 2! \cdot 2!} = 5040$

2. How many passwords can be created if there can be no repeats and 0 cannot be used as a digit. The pattern of the password is : letter, digit, digit, letter, letter.

$26 \cdot 9 \cdot 8 \cdot 25 \cdot 24 = 1,123,200$

3. In how many ways can Joe arrange 12 of his 16 books on his bookshelf?

$_{16}P_{12} = 8.718 \times 10^{11}$

4. What is the probability of hitting the blue target, given that you will hit the target somewhere? (Yes, this is a semi-circle)

16 cm   12 cm

Round your answer to the nearest tenth of a percent.

5. In how many different ways can 8 students be assigned to 8 seats that are arranged:

a) in a line? $8! = 40320$

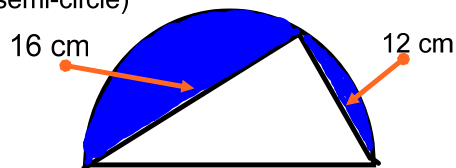b) in a circle? $(8-1)! = 7! = 5040$

6. In how many different ways can

$a^4 b^2 c^5 d$ $\dfrac{12!}{4! 2! 5!} = 83160$

be written without exponents?

Semicircle $A = \frac{1}{2}\pi(10^2) = 50\pi$

$\triangle$ area $= \frac{1}{2}(12)(16) = 96$

$P = \dfrac{50\pi - 96}{50\pi} = .3888 = 38.9\%$