

# Math 099 - Quiz 10

November 26, 2018

Name key

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) If you knew the value of  $99!$ , how could you use it to compute  $100!$ ?

$$100! = 100 \times 99!$$

2. (2 points) Compute each of the following.

(a)  $9!$   $9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 362,880$

(b)  $10!$   $10 \times 9! = 3,628,800$

3. (6 points) Compute each of the following.

(a)  $\frac{275!}{273!} = 275 \times 274 = 75,350$

(b)  $\frac{24!}{3!22!} = \frac{24!}{3! \cdot 22!} = \frac{24 \times 23}{3 \times 2 \times 1} = 4 \times 23 = 92$

(c)  ${}_{500}C_{498} = \frac{500!}{498! \cdot 2!} = \frac{500 \times 499}{2} = 124,750$