CSCE 222
Homework 5

Jacob Purcell, Texas A&M, Student

6.1

26

A):

$$\frac{10!}{6!}$$

$$\boxed{5040}$$

B):

$$10 * 10 * 10 * 5$$

$$\boxed{5000}$$

C):

$$4 * 9$$

$$\boxed{36}$$

34

Using

$$n^m$$

where $m = 10$

A):

$$n = 2$$

$$2^10$$

$$\boxed{1024}$$

B):

$$n = 3$$

$$3^10$$

$$\boxed{59049}$$

50

two zeroes:

$$2^5$$

$$\boxed{32}$$

three ones:

$$2^4$$

$$\boxed{16}$$

6.3

20

A)

$$\frac{10!}{3!7!}$$

$$\boxed{120}$$

B)

$$\Sigma_{n=10}^{6} C(10, n)$$

$$\frac{10!}{10!0!} + \frac{10!}{9!1!} + \frac{10!}{8!2!} + \frac{10!}{7!3!} + \frac{10!}{6!4!}$$

$$1 + 10 + 45 + 120 + 210$$

$$\boxed{386}$$

C)

$$\Sigma_{n=10}^{7} C(10, n)$$

$$\frac{10!}{10!0!} + \frac{10!}{9!1!} + \frac{10!}{8!2!} + \frac{10!}{7!3!}$$

$$1 + 10 + 45 + 120$$

$$\boxed{176}$$

D)

$$\Sigma_{n=10}^{3} C(10, n)$$

$$386 + \frac{10!}{5!5!} + \frac{10!}{4!6!} + \frac{10!}{3!7!}$$

$$386 + 252 + 210 + 120$$

$$\boxed{968}$$

28

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A):

$$C(13, 10)$$

$$\frac{13!}{10!3!}$$

$$\boxed{286}$$

B):

$$P(13, 10)$$

$$\frac{13!}{3!}$$

$$\boxed{1037836800}$$

C):

$$\frac{1037836800}{10!} - C(10, 10)$$

$$\boxed{285}$$

32

A):

$$\frac{16!}{5!11!} - \frac{9!}{5!4!}$$

$$\boxed{4242}$$

B):

$$4242 - \frac{7!}{5!2!}$$

$$\boxed{4221}$$