MTH 231 QUIZ 5

6.1: 1-16, 27-29, 32, 33, 96-99

1) 18 math maj's, 325 comp sci maj

a) how many ways to pick 1m + 1cs

↳ $18 \cdot 325 = \boxed{5850}$

b) one rep that is either major

$(18 + 325) = \boxed{343}$

3) mult choice test, 10 q. 4 ans per

a) how many ways to complete test = $\boxed{4^{10}} = \dots$

b) if student can leave qu's blank for each question, 5 possible outcomes → $\boxed{5^{10}}$

5) NY ··· 6 ··· DEN ··· 7 ··· SFO $= 6 \cdot 7 = \boxed{42}$

7) 3-letter-mthals 26^3

29) License Plates (AA#### | ##AAA)

↳ $(26^2 \cdot 10^4) + (26^4 \cdot 10^2) = 52.45 \cdot 7.600$

~~33) Alphabet = {A...Z} all 8-digit~~ super flows

a) 8-digit, rep. ok: 26^8

b) rep not ok ~~$26 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1$~~ $26 \cdot 25 \cdots 19$

49) Bit strings of length 10 begin or end with 2 0's with 3 0's

000 ... = 128

.....00 = 256 = 384

Overlap: 000...00 = 32

$384 - 32 = \boxed{352}$

47) how many ways can a photographer arrange 6 people if

a) bride must be next to groom

B+G

_ _ _ _ _ _

5 | Bride and groom occupy 2 spaces, only 5 different spots to put them

~~b)~~ B G ... ≠ G B

2 | two different ways to arrange the bride and groom

B 6 4 3 2 1 = 24

$24 \cdot 5 \cdot 2 = \boxed{240}$

b) 20 different ways to have groom not next to bride...

$20 \cdot 24 = \boxed{480}$

c) bride to left of groom

$24 \cdot 15 = \boxed{360}$

~~49)~~