#1 $\frac{4+4+5+10+9+1+4}{7}$

mean = 5.29 = 37/7

1 4 4 4 5 9 10

median = 4

#2 $\frac{2000+8054+1132+649+2019+1743}{6}$

mean = 2599.5

649, 1132, 1743, 2000, 2019, 8054

$\frac{1743+2000}{2}$

median = 2743

#3 $\frac{5.33+5.12+6.95+6.45+4.67+5.19}{6}$

mean = 5.62

4.67, 5.12, 5.19, 5.33, 6.45, 6.95

$\frac{5.19+5.33}{2} = 5.26$

#4

a) $\binom{32}{3} = \frac{32!}{3!(32-3)!}$

$= \frac{32!}{3!(29)!}$

$= 4960$

b) 0 factorial equals 1

c) $\binom{n}{k} = \frac{n!}{k!(n-k)!}$

$\binom{n}{n-k} = \frac{n!}{(n-k)!(n-n+k)!}$

$\binom{n}{n-k} = \frac{n!}{(n-k)!\,k!} = \binom{n}{k}$

#5

a) 1

b) 1, 1

c) 1, 2, 1

d) 1, 3, 3, 1

e) 1, 4, 6, 4, 1

f) Pascal's Triangle Diagonals

g) Pascal's Identity

$\binom{9}{2}(.19)^2(.81)^7 =$

$\frac{9!}{7!2!}(.19)^2(.81)^7 = .297$

#6

#7

$\frac{7!}{5!2!}(.11)^2(.89)^5 +$

$\frac{7!}{6!1!}(.11)^1(.89)^6 +$

$\frac{7!}{7!0!}(.11)^0(.89)^7$

$.1419 + .3827 + .4423$

$= .9669$

$\binom{9}{0}(.35)^0(.65)^9 +$ #8

$\binom{9}{1}(.35)^1(.65)^8$

$\frac{9!}{9!0!}(.35)^0(.65)^9 +$

$\frac{9!}{8!1!}(.35)^1(.65)^8$

$.0207 + .1004$

$1 - .0207 - .1004$

$= .8789$

#9

$\frac{7!}{5!2!}(.68^2)(.32^5) +$

$\frac{7!}{4!3!}(.68^3)(.32^4) +$

$\frac{7!}{3!4!}(.68^4)(.32^3)$

$.0326 + .1154 + .2452$

$= .3932$