Probability Review for ALL Levels

(1) $C(25,3) = 2300$

(2) $2 \cdot 3 + 1 \cdot 2 = 8$

(3) $C(12,7)\cancel{(2)(2)}^{5} = 792$

(4) $P(23,19) = 1.077 \times 10^{21}$

(5) $C(2,2) \cdot C(50,11) = 9.7354 \times 10^{10}$

(6) $6^5 = 7776$

(7) $6 \cdot 5 \cdot C(5,3) = 300$

(8) $300/7776 = 25/648$

(9) $P(8,3) = 336$

(10) (A) $6! = 720$

(B) $7! \cdot 2^7 = 645120$

(C) $6!/2 = 360$

(D) $7! = 5040$

(11) $16!/(8!5!3!) = 720720$

(12) $C(25,3) = 2300$

(13) $14! = 8.7178 \times 10^{10}$

(14) $14! - 13! \cdot 2 = 7.4724 \times 10^{10}$

(15) $7!/(3!2!) = 420$

(16) $C(7,4) \cdot C(10,6) = 7350$

(17) $6! \cdot 3! = 4320$

(18) $4! \cdot 5! = 2880$

(19) $\frac{5+4+3+2+1}{36} = 21/36 = 7/12$

(20) $\{1,1,4\}\ \{1,2,3\}\ \{2,2,2\}$ $\frac{3+6+1}{6 \cdot 6 \cdot 6} = 5/108$

(21) $(5+11-2)/36 = 14/36 = 7/18$

(22) $2/36 = 1/18$ so $P = 1 - \frac{5}{18} = \frac{13}{18}$

(23) (A) $C(15,3)/C(20,3) = 91/228$

(B) $C(15,2) \cdot C(5,1)/C(20,3) = 35/76$

(C) $91/228 + 35/76 = 49/57$

(D) $C(5,3)/C(20,3) = 1/114$

(24) (A) $(.75)^3 = .421875 = 27/64$

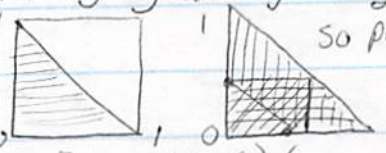
(B) $C(3,1)(.25)^1(.75)^2 = .421875 = 27/64$

(C) $C(3,2)(.25)^2(.75)^1 = .140625 = 9/64$

(25) $x, y, 1-x-y$ to be a $\triangle$, $0<x<1$, $0<y<1$, $x+y<1$

$x+y > 1-x-y$, $x+1-x-y > y$ and $y+1-x-y > x$

Graph all 3 sample space → so prob $= 1/4$



(26) $\{10,10\}\ \{10,5\}$ so $(1+6)/C(10,2) = 7/45$

(27) (A) $\{2,3,5,7,11,13\}$ $C(6,4)/C(15,4) = 1/91$

(B) $\{3\text{evens} + 1\text{odd}\}$ OR $\{3\text{odds} + 1\text{even}\}$ =

$(C(7,3) \cdot C(8,1) + C(8,3) \cdot C(7,1))/C(15,4) = 392/1365$

(28) $P(C \text{ and } A) = P(A) \cdot P(C/A)$ so $.3 = .4 \cdot P(C/A)$

so $P(C/A) = 3/4 = 75\%$

(29) (A) $(.4)^5 = 32/3125 = .01024$

(B) $1 - .6^5 = 2882/3125 = .92224$

(C) $C(5,2)(.4)^2(.6)^3 = .3456 = 216/625$

(30) (A) $C(8,5)/C(20,5) = 7/1938$

(B) $1 - C(12,5)/C(20,5) = 613/646$

(C) $C(8,2) \cdot C(12,3)/C(20,5) = 385/969$

(31) (A) $8/15$

(B) Should be "70%", 7:3

(C) Should be "70%" 3:7