

**BIO-341-01-0901: Enrichment Activity #9: Genetic Counseling Exercise**

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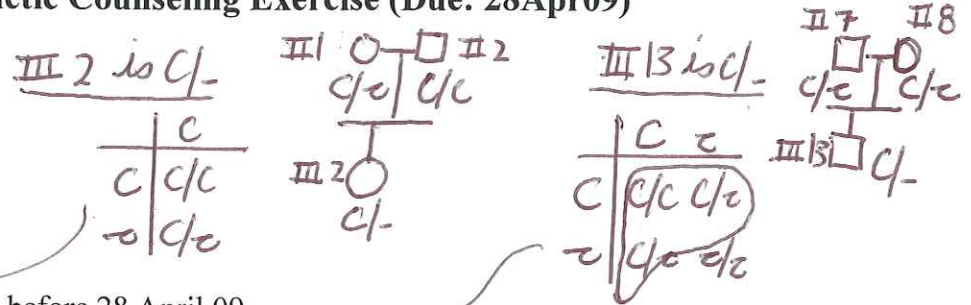
Sent: Tuesday, April 21, 2009 11:25 AM

To: Lin, Peter

Keys

**Enrichment Activity #9: Genetic Counseling Exercise (Due: 28Apr09)**

- albino a) P(2 x 13 → c/c) = ?  $\frac{1}{12}$
- carrier b) P(2 x 13 → C/c) = ?  $\frac{5}{12}$
- homo normal c) P(2 x 13 → C/C) = ?  $\frac{6}{12}$



Complete Enrichment Activity #9 before 28 April 09.

Indicate your completion of EA#9 by posting your name in the Genetics Discussion Board under the "Enrichment Activity #9" Forum.

III 2 x III 13 C/c C/c	Progeny			Scenario
	(a) c/c	(b) C/c	(c) C/C	
$\frac{1}{2} C/c$ <ul style="list-style-type: none"> <li><math>\frac{2}{3} C/c</math></li> <li><math>\frac{1}{3} C/c</math></li> </ul>	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{1}{4}$	i/
	$\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{1}{4} = \frac{1}{12}$	$\frac{1}{2}$	$\frac{1}{2}$	ii/
$\frac{1}{2} C/c$ <ul style="list-style-type: none"> <li><math>\frac{2}{3} C/c</math></li> <li><math>\frac{1}{3} C/c</math></li> </ul>	0	$\frac{1}{2}$	$\frac{1}{2}$	iii/
	0	$\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{1}{2} = \frac{1}{6}$	$\frac{1}{2}$	iv/
Probability P	$\frac{1}{12} + 0 + 0 + 0 = \frac{1}{12}$	$\frac{2}{12} + \frac{1}{2} + \frac{2}{12} + 0 = \frac{5}{12}$	$\frac{1}{12} + \frac{1}{2} + \frac{2}{12} + \frac{2}{12} = \frac{6}{12}$	
	c/c albino	C/c carrier (heterozygous) normal	C/C homozygous normal	

$P(\text{normal})$   
 $= 1 - P(\text{albino})$   
 $= 1 - \frac{1}{12} = \frac{11}{12}$

$P(\text{normal})$   
 $P(C/c) + P(C/C)$   
 $= \frac{5}{12} + \frac{6}{12}$   
 $= \frac{11}{12}$