

## Exercise: *Hardy-Weinberg equilibrium*

• 1)

100/100	100/75	75/75	total
1	22	7	30

prop 100:

prop 75:

Test of HW equilibrium: via  $X^2$  test

	100/100	100/75	75/75	total
observed	1	22	7	30
expected				30
chi-square				

d.l. =

p =

## Exercise: *Hardy-Weinberg equilibrium*

• 2)

A1A1	A1A2	A1A3	A2A2	A2A3	A3A3	Total
4	8	15	6	21	28	82

prop A1:

prop A2:

prop A3:

Test of HW equilibrium: via  $X^2$  test

	A1A1	A1A2	A1A3	A2A2	A2A3	A3A3	Total
observed	4	8	15	6	21	28	82
expected							82
chi-square							

d.l. =

p =

## Exercise: *F*-statistics

Population	Genotypes			Total	Allele frequency	$H_o$	$H_e$	F
	$A_1A_1$	$A_1A_2$	$A_2A_2$					
1	50	21	3		$A_1: p=$ $A_2: q=$			
2	14	23	12		$A_1: p=$ $A_2: q=$			

combined:

$H_i =$

$A_1: p=$

$A_2: q=$

$H_s =$

$H_T =$

$F_{ST} =$

$F_{IS} =$

$F_{IT} =$

## Exercise: *F*-statistics

Population n	Genotypes						Total	Allele frequency	H <sub>o</sub>	H <sub>e</sub>	F
	A <sub>1</sub> A <sub>1</sub>	A <sub>1</sub> A <sub>2</sub>	A <sub>1</sub> A <sub>3</sub>	A <sub>2</sub> A <sub>2</sub>	A <sub>2</sub> A <sub>3</sub>	A <sub>3</sub> A <sub>3</sub>					
1	35	25	20	15	14	8		A <sub>1</sub> : p= A <sub>2</sub> : q= A <sub>3</sub> : r=			
2	23	31	45	12	25	31		A <sub>1</sub> : p= A <sub>2</sub> : q= A <sub>3</sub> : r=			
3	12	9	2	9	3	1		A <sub>1</sub> : p= A <sub>2</sub> : q= A <sub>3</sub> : r=			

combined:

H<sub>I</sub> =

A<sub>1</sub>: p=

H<sub>S</sub> =

A<sub>2</sub>: q=

H<sub>T</sub> =

A<sub>3</sub>: r=

F<sub>ST</sub> =

F<sub>IS</sub> =

F<sub>IT</sub> =