

SpongeBob Genetics: Blood Types & Sex-Linked Traits



1. Tell whether the following blood genotypes are homozygous (Ho) or heterozygous (He).

AA ____ OO ____ BO ____ BB ____ AB ____ AO ____

Which would be considered purebred? _____

Which would be considered hybrid? _____

2. Determine the blood type phenotype for each genotype:

AA ____ AO ____ OO ____ BB ____ BO ____ AB ____

3. For each blood type phenotype, give the genotypes possible:

Type A: _____ Type B _____ Type O _____ Type AB _____

4. Sandy Squirrel met Stewart Squirrel at the water chestnut festival. They fell in love. Sandy is blood type AB & Stewart is blood type O.

Sandy Squirrel's genotype: _____

Stewart Squirrel's genotype _____

Make a Punnett square to show the possible blood genotypes of heir children

What is the possibility of a baby squirrel with blood type O? ____ out of ____ or ____ %

What is the possibility of a baby squirrel with blood type AB? ____ out of ____ or ____ %

What is the possibility of a baby squirrel with blood type A? ____ out of ____ or ____ %

What is the possibility of a baby squirrel with blood type B? ____ out of ____ or ____ %

5. Pearl the whale had a horrible accident at cheerleading practice and needed a blood transfusion. So she needed to find out her possible blood type. Her dad, Mr. Krabbs is homozygous for blood type A and her mom is heterozygous for blood type B.

Mr. Krabbs genotype: ____

Mrs. Krabbs genotype: ____

Make a Punnett square to show Pearl's possible blood type(s)

What is the possibility of Pearl having blood type O? ____ out of ____ or ____ %

What is the possibility of Pearl having blood type AB? ____ out of ____ or ____ %

What is the possibility of Pearl having blood type A? ____ out of ____ or ____ %

What is the possibility of Pearl having blood type B? ____ out of ____ or ____ %

6. In sponges, there exists a sex-linked recessive disorder that causes a sponge to have tiny pores. (X^P = normal pores, X^p = recessive small pores). SpongeBob & his true love SpongeSusie are planning to have baby sponges. SpongeBob has the disorder & Susie is a carrier.

SpongeBob's genotype: ____

SpongeSusie's genotype: ____

Make a Punnett square to show the possible genotypes of their children.

What percentage of their sons will have the disorder? ____

What percentage of their sons will be normal? ____

What percentage of their daughters will have the disorder? ____

What percentage of their daughters will be normal but carriers? ____

What percentage of their daughters will be normal non-carriers? ____

	X	X
X		
Y		

