Name _____ Date _____ Period _____

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# Punnett Squares

Biology

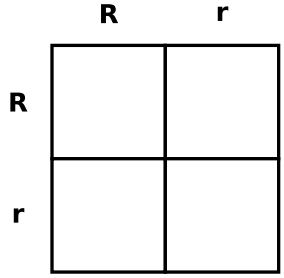
Show your work in the blank space. Write probabilities as fractions.

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**1.** In pea plants, R = round seeds (dominant) and r = wrinkled seeds (recessive). Two heterozygous plants are crossed.

**Rr x Rr**

*(R = round, r = wrinkled)*




(a) Fill in the Punnett square.

(b) What is the probability that an offspring has wrinkled seeds?

(c) What is the probability that an offspring has round seeds?

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**2.** In pea plants, T = tall (dominant) and t = short (recessive). A heterozygous tall plant is crossed with a short plant.

(a) Draw a Punnett square and give the probability that an offspring is tall.

(b) The cross produces 80 offspring. About how many are expected to be short?


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**3.** A purple pea plant (P = purple, p = white) has an unknown genotype. A scientist crosses it with a white plant. This is a test cross.

**If the purple plant is PP**

PP x pp

| | **P** | **P** |
|---|---|---|
| **p** | | |
| **p** | | |

**If the purple plant is Pp**

Pp x pp

| | **P** | **p** |
|---|---|---|
| **p** | | |
| **p** | | |

(a) Fill in both Punnett squares.

(b) The cross gives 31 purple and 29 white offspring. What is the genotype of the purple parent?

**4.** Cystic fibrosis is a recessive trait. Two parents are both carriers (Cc).

(a) What is the probability that a child has cystic fibrosis?

(b) What is the probability that two children, born separately, both have cystic fibrosis?

(c) A child of these parents does not have cystic fibrosis. What is the probability that this child is a carrier?


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