A family has three children.

Using *b* to stand for boy and *g* for girl give the following. (To indicate that the first child is a boy, the second child is a boy, and the third child is a girl enter *bbg*. Enter your answers as a comma-separated list.)

(a) the sample space

$$S = \{ \qquad \}$$

(b) the event *E* that the family has exactly two daughters

$$E = \{ \qquad \}$$

(c) the event *F* that the family has at least two daughters

$$F = \{ \qquad \}$$

(d) the event *G* that the family has three daughters

$$G = \{ \qquad \}$$

Give the following. (Assume that boys and girls are equally likely. Enter your probabilities as fractions.)

(e) *p*(*E*)

☐

(f) $p(F)$

(g) $p(G)$

(h) $o(E)$

(i) $o(F)$

(j) $o(G)$

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Three coins are tossed.

Using H to indicate heads and T to indicate tails, give the following. (To indicate that the first coin is tails, the second coin is tails, and the third coin is heads enter TTH. Enter your answers as a comma-separated list.)

(a) the sample space

$$S = \{ \qquad \}$$

(b) the event E that exactly two are heads

$$E = \{ \qquad \}$$

(c) the event F that at least two are heads

$$F = \{ \qquad \}$$

(d) the event G that all three are heads

$$G = \{ \qquad \qquad \}$$

Give the following. (Enter the probabilities as fractions.)

    (e) $p(E)$

    [   ]

    (f) $p(F)$

    [   ]

    (g) $p(G)$

    [   ]

    (h) $o(E)$

    (i) $o(F)$

    (j) $o(G)$

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Two coins are tossed.

(a) Find the probability that both are heads.

[_____]

(b) Find the probability that one is heads and one is tails.

[_____]

(c) Find the probability that both are tails.

[_____]

(d) Which is more likely: that the two coins match or that they don't match?

○ Two coins that match are more likely.

○ Two coins that don't match are more likely.

○ There isn't enough information to draw a conclusion.

○ They are equally likely.

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Mendel found that snapdragons have no color dominance; a snapdragon with one red gene and one white gene will have pink flowers. If a pure-red snapdragon is crossed with a pure-white one, find the probability of the following.

(a) a red offspring

[_____]

(b) a white offspring

[_____]

(c) a pink offspring

[_____]

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