

Key

Math 150 Quiz 6

1. A bag contains 4 red, 1 blue, 3 green, and 8 yellow marbles. If one marble is chosen at random, find the probability that:

- a) a red marble was chosen.
- b) a green or yellow marble was chosen.
- c) a blue marble was not chosen.

a) $\boxed{\frac{4}{16}}$ or $\frac{1}{4}$ (4 out of 16 marbles are red) c) $\boxed{\frac{15}{16}}$ (15 out of 16 marbles are not blue)

b) $\frac{3+8}{16} = \boxed{\frac{11}{16}}$ (3 green & 8 yellow marbles out of 16 total)

2. Men (M) and women (W) pet owners were asked if they own a cat (C) or a dog (D). Results are in the table.

	Owens a cat (C)	Owens a dog (D)	Total
Men (M)	7	13	20
Women (W)	12	8	20
Total	19	21	40

If one person is chosen at random, find:

- a) $P(M \cap D)$
- b) $P(W \cup C)$

a) $\boxed{\frac{13}{40}}$ (13 men own dogs out of 40 total people)

b) $P(W \cup C) = P(W) + P(C) - P(W \cap C)$
 $= \frac{20}{40} + \frac{19}{40} - \frac{12}{40}$
 $= \boxed{\frac{27}{40}}$