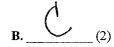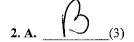# CHAPTER 5 Review for QUIZ

Name: _Key_

Write the letter of the response that best answers each problem.

1. A random sample of 420 new hybrid vehicles showed that 105 required repairs within the first warranty year.

   A. What is the probability that a new hybrid vehicle will need repairs within the first warranty year?　　1. A. __D__ (1)

   (a) 105　　(b) 0.75　　(c) 315　　(d) 0.25　　(e) Not enough information

   B. What type of assigning probability is in problem A?

   B. __C__ (2)
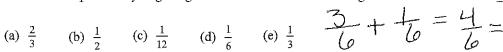
   (a) Intuition　　(b) Equally Likely　　(c) Relative frequency

2. If you roll a single fair die and count the number of dots on top,

   A. What is the probability of getting an even number?　　2. A. __B__ (3)

   (a) $\frac{2}{3}$　　(b) $\frac{1}{2}$　　(c) $\frac{1}{12}$　　(d) $\frac{1}{6}$　　(e) $\frac{1}{3}$

   B. What is the probability of getting a 5?　　2. B. __D__ (4)

   (a) $\frac{2}{3}$　　(b) $\frac{1}{2}$　　(c) $\frac{1}{12}$　　(d) $\frac{1}{6}$　　(e) $\frac{1}{3}$

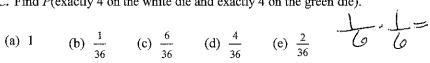   **C.** What is the probability of getting an even number or a 5 on a single throw?　　2. C. __A__ (5)

   (a) $\frac{2}{3}$　　(b) $\frac{1}{2}$　　(c) $\frac{1}{12}$　　(d) $\frac{1}{6}$　　(e) $\frac{1}{3}$ 　$\frac{3}{6} + \frac{1}{6} = \frac{4}{6} =$

3. You roll two fair dice, a white one and a green one.

   A. Find P(a number greater than 2 on the white die and exactly 4 on the green die).　　3. A. __C__ (6)

   (a) $\frac{5}{6}$　　(b) $\frac{5}{36}$　　(c) $\frac{1}{9}$　　(d) $\frac{1}{2}$　　(e) $\frac{2}{9}$ 　$\frac{4}{6} \cdot \frac{1}{6} =$

   B. Find P(exactly 4 on the white die and a number greater than 2 on the green die).　　B. __E__ (7)

   (a) $\frac{2}{9}$　　(b) $\frac{1}{2}$　　(c) $\frac{5}{6}$　　(d) $\frac{5}{36}$　　(e) $\frac{1}{9}$ 　$\frac{1}{6} \cdot \frac{4}{6} =$

   C. Find P(exactly 4 on the white die and exactly 4 on the green die).　　C. __B__ (8)

   (a) 1　　(b) $\frac{1}{36}$　　(c) $\frac{6}{36}$　　(d) $\frac{4}{36}$　　(e) $\frac{2}{36}$ 　$\frac{1}{6} \cdot \frac{1}{6} =$

4. An urn contains 8 balls identical in every aspect except color. There is 1 red ball, 2 green balls, and 5 blue balls.

    A. You draw two balls from the urn, but replace the first ball before drawing the second. Find the probability that the first ball is blue and the second is green.   **4. A.** _A_ (9)

$$\frac{5}{8} \cdot \frac{2}{8} = \frac{10}{64} = \frac{5}{32}$$

    (a) $\frac{5}{32}$ (b) $\frac{7}{8}$ (c) $\frac{51}{56}$ (d) $\frac{5}{28}$ (e) $\frac{3}{4}$

    B. Repeat part A, but do not replace the first ball before drawing the second.   **B.** _D_ (10)

$$\frac{5}{8} \cdot \frac{2}{7} = \frac{10}{56} = \frac{5}{28}$$

    (a) $\frac{5}{32}$ (b) $\frac{7}{8}$ (c) $\frac{51}{56}$ (d) $\frac{5}{28}$ (e) $\frac{3}{4}$

5. The basketball coach found that 11% of the basketball players have an A average in school. If 2% of the students at the school are basketball players, what is the probability that a student chosen at random will be a basketball player with an A average? $.11 \cdot .02 =$ **5.** _B_ (11)

    (a) 13%   (b) 0.22%   (c) 22%   (d) 18.18%   (e) Not enough information

6. A hospital administration completed a survey of patients regarding satisfaction with care and type of surgery. The results follow:

	Heart	Hip	Knee	Total
Not Satisfied	7	12	2	21
Neutral	15	38	10	63
Satisfied	32	16	25	73
Very Satisfied	4	22	23	49
Total	58	88	60	206

Assume the table represents the entire population of patients. Find the probability that a patient selected at random is

    Marginal Relative frequency

    A. Satisfied $\frac{73}{206}$ **6 A.** _E_ (12)

    (a) 73%   (b) 73   (c) $\frac{122}{206}$ (d) 122   (e) $\frac{73}{206}$

Conditional probability

    B. Not Satisfied given the patient had Hip surgery.   **6 B.** _C_ (13)

$$\frac{12}{88} = \frac{3}{22}$$

    (a) $\frac{21}{206}$ (b) $\frac{4}{7}$ (c) $\frac{3}{22}$ (d) $\frac{2}{11}$ (e) $\frac{6}{103}$

Joint Relative frequency

    C. Neutral and patient had Knee surgery.   **6 C.** _E_ (14)

    (a) $\frac{1}{103}$ (b) $\frac{1}{6}$ (c) $\frac{10}{63}$ (d) $\frac{63}{206}$ (e) $\frac{5}{103}$

$$\text{or Mult. Rule} \rightarrow \frac{63}{206} \cdot \frac{10}{63} = \frac{5}{103}$$