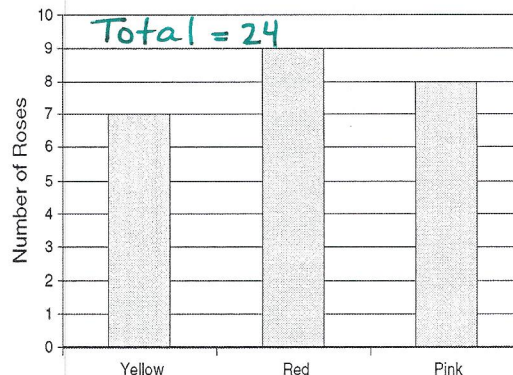1. A gardener has counted the number of roses he has of each color. The results are graphed below. If a rose is picked at random, what is the probability that the rose is pink?

$P(Pink) = \dfrac{8}{24} = 1/3$

Total = 24

(bar graph: Number of Roses vs. Yellow = 7, Red = 9, Pink = 8)

2. Which is the probability two 1-6 number cubes land on an even number?

$P(even\ and\ even) = P(even) \cdot P(even) = 1/4$

$3/6 \cdot 3/6$

3. Of the last 230 new hires at a company, 220 had college degrees and 140 had prior experience. Only 10 new hires had prior experience without a college degree. What is the approximate probability that a new hire has a college degree but no experience?

$P(degree\ but\ no\ experience) = \dfrac{90}{230} = 9/23$

Total = 220   Total = 140

(Venn diagram: Degree 90, overlap 130, Experience 10)
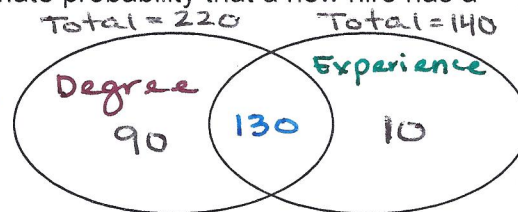
4. A company is testing a new method of manufacturing a part for their machines. They tested parts using the old and new methods.
What is the approximate probability that a part chosen at random from this group is new and passed the test?

$\dfrac{5}{60} = 1/12$

Parts Performance by Age		
	New	Old
Passed	5	23
Failed	2	30

Total = 60

5. Use the two-way table (joint and marginal frequencies) from Question 4. What is the approximate probability that a part is old?

$P(old) = .883$

| Parts Performance by Age			
	New	Old	Total
Passed	.083	.383	.466
Failed	.033	.5	.533
Total	.116	.883	1

6. What is the probability that a card drawn from a standard deck is black and a 10?

$P(black\ and\ 10) = P(black) \cdot P(10 | black)$

$\dfrac{26}{52} \cdot \dfrac{2}{26} = 1/26$

Make sure you look at everything....do not stop at this review. This is just extra!!!

7. In a new neighborhood, houses are constructed of brick, wood, or cement. **Total = 20**
According to the graph to the right, what is
the probability that a house chosen at random
is made of brick?

$$P(brick) = \frac{7}{20} \text{ or } 0.35$$

Number of Houses (bar graph: Brick, Wood, Cement)
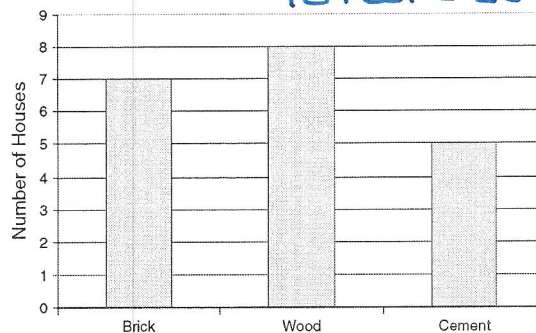
8. What is the probability a 1-6 number cube lands between 1 and 6?

$$P(between\ 1\ and\ 6) = \frac{4}{6} = 2/3$$

9. A biologist has collected data from 320 tidal pools. 125 of the pools contained shrimp and 183
contained algae. There were 147 tidal pools that contained only algae. What is the probability that a
tidal pool contains shrimp or algae?

Total = 125   Total = 183
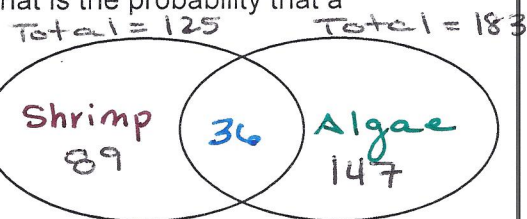
$$P(shrimp\ or\ algae)$$

$$P(shrimp) + P(algae) - P(both)$$

$$\frac{125}{320} + \frac{183}{320} - \frac{36}{320} = 17/20$$

Shrimp 89 | 36 | Algae 147

10. The table shows the results of a consumer
survey asking men and women where they prefer
to shop. What is the probability that a person
chosen from this group is a male who prefers Store
A?

Total = 36

Shopping By Gender		
	Male	Female
Store A	(12)	6
Store B	4	14

$$\frac{12}{36} = 1/3$$

11. Use the two-way table (joint and marginal
frequencies) from Question 12. What is the
probability that a person prefers store A?

Shopping By Gender			
	Male	Female	Total
Store A	.333	.167	.5
Store B	.111	.389	.5
Total	.444	.556	1

$$P(store\ A) = .5$$

12. What is the approximate probability that a card drawn from a standard deck is a club and has a letter on it?

$$P(club\ and\ letter) = P(club) \cdot P(letter\ |\ club)$$

$$\frac{13}{52} \cdot \frac{4}{13} = 1/13$$

Make sure you look at everything....do not stop at this review. This is just extra!!!