HA2T

Name: Key

10.2 Day 2 Worksheet

1. About 30% of the U.S. population is under 20 years old. About 17% of the population is over 60. What is the probability that a person chosen at random is under 20 or over 60?

$\frac{30}{100} + \frac{17}{100} = \boxed{47\%}$

2. A standard number cube is tossed. Find each probability.

a) . P(3 or odd) $\frac{1}{6} + \frac{3}{6} - \frac{1}{6} = \boxed{\frac{1}{2}}$

b) P(4 or even) $\frac{1}{6} + \frac{3}{6} - \frac{1}{6} = \boxed{\frac{1}{2}}$

c) P(even or less than 4) $\frac{3}{6} + \frac{3}{6} - \frac{1}{6} = \boxed{\frac{5}{6}}$

d) P(odd or greater than 2) $\frac{3}{6} + \frac{4}{6} - \frac{2}{6} = \boxed{\frac{5}{6}}$

3. For each set of probabilities, determine if the events A and B are mutually exclusive.

Mutually Exclusive $P(A \text{ or } B) = P(A) + P(B)$

a) P(A)=1/2, P(B)=1/3, P(A or B)=2/3

$\frac{1 \cdot 3}{2 \cdot 3} + \frac{1 \cdot 2}{3 \cdot 2} = \frac{2}{3}$ NO

b) P(A)=1/6, P(B)=3/8, P(A or B)=13/24

$\frac{1 \cdot 4}{6 \cdot 4} + \frac{3 \cdot 3}{8 \cdot 3} = \frac{13}{24}$ YES

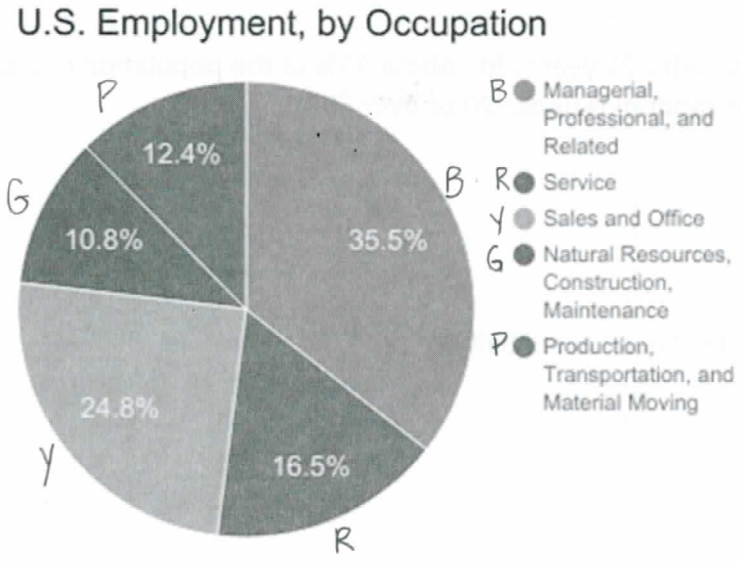
4. S and T are mutually exclusive events. Find P(S or T).

a) P(S)=5/8, P(T)=1/8 $\frac{5}{8} + \frac{1}{8} = \boxed{\frac{3}{4}}$

b) P(S)=3/5, P(T)=1/3 $\frac{3 \cdot 3}{5 \cdot 3} + \frac{1 \cdot 5}{3 \cdot 5} = \boxed{\frac{14}{15}}$

c) P(S)=12%, P(T)=27% $12\% + 27\% = \boxed{39\%}$

5. The graph below shows the types of jobs held by people in the U.S. Determine each probability.



a. A person is in service occupation.

16.5%

b. A person is in service or sales and office.

16.5 + 24.8 = 41.3%

c. A person is not in production, transportation, and material moving.

35.5% + 16.5% + 24.8% + 10.8% = 87.6%

d. A person is neither in service nor in sales and office.

10.8% + 12.4% + 35.5% = 58.7%