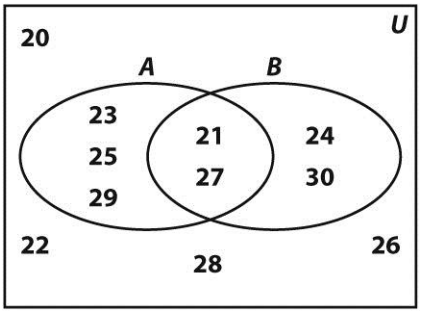
UNIT 10 Understanding Probability

MODULE 22 Introduction to Probability

LESSON 22-1

Practice and Problem Solving: A/B

1. $A \cap B = \{21, 27\}$
2. $\sim A = \{20, 22, 24, 26, 28, 30\}$
3. $A \cup B = \{21, 23, 24, 25, 27, 29, 30\}$
4. $\sim B = \{20, 22, 23, 25, 26, 28, 29\}$
5. $n(A) = 5$
6. $n(B) = 4$
7. Possible answer: $C = \{25, 27, 29\}$; $C \subset A$
8. Possible answer: $D = \{30\}$; $D \subset B$
9. 

10. 1) the overlap of circles A and B
    2) outside circle A
    3) inside circles A and B
    4) outside circle B
11. $\frac{n(A)}{n(U)} = \frac{5}{11}$
12. $\frac{6}{11}$
13. $\frac{7}{11}$
14. $\frac{4}{11}$

LESSON 22-2

Practice and Problem Solving: A/B

1. 120
2. 720
3. 5040
4. 6
5. 7
6. 8
7. $\frac{n!}{(n-1)!} = n$
8. $\frac{n!}{(n-2)!} = n(n-1)$
9. There are $5 \times 4 \times 4 = 80$ color patterns. The first stripe can be any color, so there are 5 choices. The second stripe can be any of the other 4 colors. There are also 4 choices for the third stripe (any color except the second one).
10. 24
11. 1680
12. $10 \times 10 \times 10 = 1000$ (all the numbers from 000 to 999); $\frac{1}{1000}$
13. The number of different orders is $8! = 40{,}320$. The number of different possibilities for the first 2 songs is $8 \times 7 = 56$, and only 1 is the desired order, so the probability is $\frac{1}{56}$.
14. $\frac{1}{16}$