

Bellwork Alg 2 Tuesday, May 28, 2019

1. In a production of Grease, eight actors are considered for the male roles of Danny, Kenickie, and Marty. In how many ways can the director cast the male roles?

2. On your shelf there are the following movies: 5 mystery, 8 action/adventure, and 6 comedy.

a) How many ways can you pick one of each to watch over the weekend?

b) You are going to watch 6 movies over vacation. How many ways can you choose two of each to watch?

3. You run a 5k race for charity. The top three finishers each win a \$100 gift certificate. If there are 50 people running the race how many ways can the gift cards be awarded?

4. There are 25 people in a jury pool waiting to see if they will be selected for jury duty.

a) A jury of 12 members must be selected from that jury pool. How many different juries are possible?

b) After the jury is selected a Foreman and an Assistant Forman must be selected from the member of the jury. How many ways can this be done?

5. You are playing cards with a friend and are using a Standard Deck of 52 cards. You are dealt six cards.

a) How many different six card hands can be dealt?

b) How many ways can you arrange all six cards in your hand?

c) When it's your turn you get to take three cards out of your hand and trade them for three new cards. How many ways can you do this?

1. In a production of Grease, eight actors are considered for the male roles of Danny, Kenickie, and Marty. In how many ways can the director cast the male roles?

$${}_8P_3 = 336$$

2. On your shelf there are the following movies: 5 mystery, 8 action/adventure, and 6 comedy.

a) How many ways can you pick one of each to watch over the weekend?

$$\frac{5}{1 \text{ MYST}} \cdot \frac{8}{1 \text{ ACT/ADV}} \cdot \frac{6}{1 \text{ COM}} = 240$$

b) You are going to watch 6 movies over vacation. How many ways can you choose two of each to watch?

$$\frac{{}_5C_2}{2 \text{ MYST}} \cdot \frac{{}_8C_2}{2 \text{ ACT/ADV}} \cdot \frac{{}_6C_2}{2 \text{ COM}} = 10 \cdot 28 \cdot 15 = 4200$$

3. You run a 5k race for charity. The top three finishers each win a \$100 gift certificate. If there are 50 people running the race how many ways can the gift cards be awarded?

$${}_{50}C_3 = 19,600$$

4. There are 25 people in a jury pool waiting to see if they will be selected for jury duty.

a) A jury of 12 members must be selected from that jury pool. How many different juries are possible?

$${}_{25}C_{12} = 5,200,300$$

b) After the jury is selected a Foreman and an Assistant Foreman must be selected from the member of the jury. How many ways can this be done?

$${}_{12}P_2 = 132$$

5. You are playing cards with a friend and are using a Standard Deck of 52 cards. You are dealt six cards.

a) How many different six card hands can be dealt?

$${}_{52}C_6 = 20,358,520$$

b) How many ways can you arrange all six cards in your hand?

$$6! \text{ or } {}_6P_6 = 720$$

c) When it's your turn you get to take three cards out of your hand and trade them for three new cards. How many ways can you do this?

$${}_6C_3 = 20$$