

## Chapter 5 Problems End of Chapter Review.

Do 1 or 2 or 5 – Use if-else.

Do 3 or 4 use switch.

Do #6 with random.

### Case

1. Create a Graduation application that prompts the user for a graduating grade point average and then determines if the student qualifies for an honors distinction and displays an appropriate message.

A grade point average of 3.5 or higher qualifies for the distinction cum laude, a grade point average of 3.65 or higher qualifies for the distinction magna cum laude, and a grade point average of 3.8 or higher qualifies for the distinction of summa cum laude. If the student's grade point average is below 3.5 the message `You did not qualify for an honors distinction.` should be displayed.

2. Create an Award application that prompts the user for a number of activity participation awards and then determines if the student qualifies for an overall participation medal and displays an appropriate message.

Five activity awards or higher qualifies for a bronze medal, 10 activity awards or higher qualifies for a silver medal, and 14 activity awards or higher qualifies for a gold medal. If the student's activity awards number is less than 5, the message `You did not qualify for an overall participation medal.` should be displayed.

3. Create a Bridge application that prompts the user for the number of axles on their vehicle and then determines the bridge toll and displays an appropriate message. Bridge tolls are as follows:

Axle	Price
2	\$3.00
3	\$5.25
4-5	\$8.25
6	\$9.25
7	\$10.75
8	\$12.75
9	\$13.75

4. Create a Ferry application that prompts the user for the number of axles on their vehicle and then determines the ferry toll and displays an appropriate message. Ferry tolls are as follows:

Axle	Price
2	\$3.00
3	\$5.00
4-5	\$8.50
6	\$9.50
7	\$10.75
8	\$12.25
9	\$13.50

5. Create a Weight application that prompts the user for their gender (male or female) and their height and then determines their ideal body weight. The following formula is used to approximate ideal body weight:

**men:** Ideal Body Weight (in kilograms) =  $50 + 2.3 \text{ kg per inch over } 5 \text{ feet}$ .

**women:** Ideal Body Weight (in kilograms) =  $45.5 + 2.3 \text{ kg per inch over } 5 \text{ feet}$ .

The answer should be displayed in both kilograms and pounds. The following formula is used to convert kilograms to pounds:

pounds = kilograms \* 2.2

6. Create a Selection application that generates a random number between 100 and 750. The random number generated correlates to the locker number of the student who has won a week of free cafeteria lunches. Include the locker number in an appropriate message displayed by the application.

## Chapter 5 Problems

### Answer Section

#### CASE

1. ANS:  
A sample answer file corresponding to Graduation is stored on the Resource CD in the ASSESSMENT\HANDS-ON ANSWERS\Ch05 Answer Graduation folder.  
  
PTS: 1                    TOP: The if-else if Statement | The switch Statement  
NOT: Similar to the Award Case question in this bank.
2. ANS:  
A sample answer file corresponding to Award is stored on the Resource CD in the ASSESSMENT\HANDS-ON ANSWERS\Ch05 Answer Award folder.  
  
PTS: 1                    TOP: The if-else if Statement | The switch Statement  
NOT: Similar to the Graduation Case question in this bank.
3. ANS:  
A sample answer file corresponding to Bridge is stored on the Resource CD in the ASSESSMENT\HANDS-ON ANSWERS\Ch05 Answer Bridge folder.  
  
PTS: 1                    TOP: The switch Statement  
NOT: Similar to the Ferry Case question in this bank.
4. ANS:  
A sample answer file corresponding to Ferry is stored on the Resource CD in the ASSESSMENT\HANDS-ON ANSWERS\Ch05 Answer Ferry folder.  
  
PTS: 1                    TOP: The switch Statement  
NOT: Similar to the Bridge Case question in this bank.
5. ANS:  
A sample answer file corresponding to Weight is stored on the Resource CD in the ASSESSMENT\HANDS-ON ANSWERS\Ch05 Answer Weight folder.  
  
PTS: 1                    TOP: The if-else Statement
6. ANS:  
A sample answer file corresponding to Selection is stored on the Resource CD in the ASSESSMENT\HANDS-ON ANSWERS\Ch05 Answer Selection folder.  
  
PTS: 1                    TOP: Generating Random Numbers