1. Given the following switch statement:

cout << "enter the grade: ";

cin >> grade;

switch (grade)

{

case 'A':

case 'B':

cout << "good work" << endl;

break;

case 'C':

cout << "average work" << endl;

break;

case 'D':

cout << "just passing" << endl;

break;

case 'F':

cout << "poor work" << endl;

failing++;

break;

}

What would be printed if the grade were:

1. A

**good work**

1. D

**just passing**

1. b

**[nothing is printed]**

2. Modify the switch statement in question 1 so that it prints an

error message if an invalid grade is entered.

**switch (grade) {**

**case 'A':**

**case 'B':**

**cout << "good work" << endl;**

**break;**

**case 'C':**

**cout << "average work" << endl;**

**break;**

**case 'D':**

**cout << "just passing" << endl;**

**break;**

**case 'F':**

**cout << "poor work" << endl;**

**failing++;**

**break;**

**default:**

**cout << "invalid grade letter" << endl;**

**break;**

**}**

3. Modify the switch statement in question 1 so that it works for grades entered as uppercase or lowercase letters.

**switch (toupper(grade)) {**

**case 'A':**

**case 'B':**

**cout << "good work" << endl;**

**break;**

**case 'C':**

**cout << "average work" << endl;**

**break;**

**case 'D':**

**cout << "just passing" << endl;**

**break;**

**case 'F':**

**cout << "poor work" << endl;**

**failing++;**

**break;**

**default:**

**cout << "invalid grade letter" << endl;**

**break;**

**}**

4. A. Write the equivalent if/else statements for the program segment

in Question # 1.

**if (grade == 'A' || grade == 'B') {**

**cout << "good work" << endl;**

**} else if (grade == 'C') {**

**cout << "average work" << endl;**

**} else if (grade == 'D') {**

**cout << "just passing" << endl;**

**} else if (grade == 'F') {**

**cout << "poor work" << endl;**

**failing++;**

**} else {**

**cout << "invalid grade" << endl;**

**}**

B. If you were guaranteed that only VALID grades would be entered

by the user, could the if/else statement be written any

differently? If so, how?

**The last else statement could be removed.**

5. Show the output of the following:

int1 = 4;

switch (int1)

{

case 1:

cout << 4;

break;

case 2:

cout << 1;

break;

case 3:

cout << 7;

break;

case 4:

cout << 9;

break;

case 5:

cout << 6;

break;

}

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6. Show the output of the following:

int1 = 4;

switch (int1)

{

case 1:

cout << 4;

break;

case 2:

cout << 1;

break;

case 3:

cout << 7;

break;

case 2:

cout << 9;

break;

case 5:

cout << 6;

break;

}

**There will be no output since the switch statement has a duplicate case and therefore will not compile.**

7. Show the output of the following:

int1 = 4;

switch (int1)

{

case 1:

cout << 4;

break;

case 2:

cout << 1;

break;

case 3:

cout << 7;

break;

case 4:

cout << 9;

case 5:

cout << 6;

}

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8. An electronics store is having a sale. Items from the audio department (dept code 310) are 10% off. Items from the video department (dept code 438) are 12% off. Items from the computer department (dept code 284) are 8% off, and items from the communications department (dept code 652) are 15% off. Items from other departments are 5% off. Write the statements to read in the regular price of an item and the dept code, and calculate the sale price. Print the regular price and the sale price. Use a nested if statement.

**double price, discounted;**

**int department\_code;**

**cout << "Enter price: ";**

**cin >> price;**

**cout << "Enter dep. code: ";**

**cin >> department\_code;**

**if (department\_code == 310) {**

**discounted = price \* (1 - 0.1);**

**} else if (department\_code == 438) {**

**discounted = price \* (1 - 0.12);**

**} else if (department\_code == 284) {**

**discounted = price \* (1 - 0.08);**

**} else if (department\_code == 652) {**

**discounted = price \* (1 - 0.15);**

**} else {**

**discounted = price \* (1 - 0.05);**

**}**

**cout << "Regular : " << price << endl;**

**cout << "Discount: " << discounted << endl;**

9. Rewrite your code from problem 8 using a switch statement.

**double price, discounted;**

**int department\_code;**

**cout << "Enter price: ";**

**cin >> price;**

**cout << "Enter dep. code: ";**

**cin >> department\_code;**

**switch (department\_code) {**

**case 310:**

**discounted = price \* (1 - 0.1);**

**break;**

**case 438:**

**discounted = price \* (1 - 0.12);**

**break;**

**case 284:**

**discounted = price \* (1 - 0.08);**

**break;**

**case 652:**

**discounted = price \* (1 - 0.15);**

**break;**

**default:**

**discounted = price \* (1 - 0.05);**

**break;**

**}**

**cout << "Regular : " << price << endl;**

**cout << "Discount: " << discounted << endl;**