ICS4UO Selection

1) **A clothing store will give a 15% discount to anyone who spends over $100. Write a program that prompts for the total purchases made. The program will calculate the discount if it applies and output the total purchases.**

```
Scanner input = new Scanner (System.in);
System.out.println("Enter the total purchases made:");
double purchases = input.nextDouble();
double total;
double discount;
if (purchases>100) {
        discount = purchases*0.15;
        total = purchases - discount;
        System.out.println("Total purchases made after discount: $"
+ total);
}
else {
        System.out.println("Total purchases made: $" + purchases);
}
```

   a. **Modify the program to calculate the tax and final total of the purchases. Calculate the discount BEFORE the tax.**

Sample Output
Enter the total purchases made: **110** **Subtotal with discount: $ 93.5** **Total after taxes: $105.66**

```
System.out.println("Enter the total purchases made:");
double purchases = input.nextDouble();
double subtotal;
double discount;
double total;
double tax;
if (purchases>100) {
        discount = purchases*0.15;
        subtotal = purchases - discount;
        tax = subtotal*0.13;
        total = Math.round((subtotal + tax)*100.0)/100.0;
        System.out.println("Subtotal with discount: $" + subtotal);
        System.out.println("Total after taxes: $" + total);
}
else {
        tax = purchases*0.13;
```

```
        total = Math.round((purchases + tax)*100.0)/100.0;
        System.out.println("Total after taxes: $" + total);
    }
```

2) **Pacman is very hungry and has gobbled up 52 pellets already. Write a program that will feed Pacman additional pellets by prompting the user for the amount of pellets to feed Pacman (no half pellets please). If Pacman has eaten a total of 100 pellets or less, output the message "I'm still hungry. FEED me MORE!!". Also, if Pacman has eaten 101 to 150 pellets, output the message "Thanks!". Finally, if Pacman has eaten over 151 pellets, output the message "no more please. I'm full!"**

```
        Scanner input = new Scanner(System.in);
        System.out.println ("Enter the amount of pellets to feed Pacman (no half
pellets please)");
        int pellets = input.nextInt();
        if (pellets<=100) {
            System.out.println("I'm still hungry. FEED me MORE!!");
        }
        else if (pellets>=101 && pellets<=150) {
            System.out.println("Thanks!");
        }
        else if (pellets>151) {
            System.out.println("no more please. I'm full");
        }
```

3) **Ian works at Baskin-Robins. He gets a bonus if he sells more than 150 cones per week. For his bonus, he receives $10 plus 10c each in excess of 150 cones. If he sells 250 cones, he earns an additional 25c. If he sells 350 cones, he receives an additional 35c per cone sold. Write a program that prompts for the number of cones sold per week and calculate and output his bonus.**

Sample Output
Enter the number of cones sold: **???** **He will earn $??? If he sells ??? cones**

```
        Scanner input = new Scanner (System.in);
        System.out.println("Enter the number of cones sold:");
        int cones = input.nextInt();
        double bonus;
        if (cones>=350) {
            bonus = (cones*0.35)+10;
            System.out.println("He will earn $" + bonus + " If he sells " +
cones +  " cones");
        }
        else if (cones>=250) {
```

```
                bonus = (cones*0.25)+10;
                System.out.println("He will earn $" + bonus + " If he sells " +
cones +  " cones");
        }
        else if (cones>=150) {
                bonus = (cones*0.10)+10;
                System.out.println("He will earn $" + bonus + " If he sells " +
cones +  " cones");
        }
        else {
                System.out.println("Enter a valid number for the cones sold");
        }
```

4) The following is a list of some of the weight classes in the International Boxing Federation.

x - Weight Limit (in kg)	Class
90.72 < x < No limit	Heavyweight
79.4 < x <= 90.72	Cruiserweight
76.2 < x <= 79.4	Light Heavyweight
72.6 < x <= 76.2	Super middleweight
69.9 < x <= 72.6	Middleweight

Write a program that prompts the user for the name of a boxer and their weight. If their weight is not on the chart, classify them as 'unknown'. This program will output their name and the weight class by name

```
Scanner input = new Scanner (System.in);
System.out.println("Enter name of boxer:");
String name = input.nextLine();
System.out.println("Enter weight of boxer:");
double weight = input.nextDouble();
if (weight>90.72) {
        System.out.println(name + " is Heavyweight");
}
else if (weight>79.4 && weight<=90.72) {
        System.out.println(name + " is Cruiserweight");
}
else if (weight>76.2 && weight<=79.4) {
        System.out.println(name + " is Light Heavyweight");
}
else if (weight>72.6 && weight<=76.2) {
        System.out.println(name + " is Super middleweight");
}
else if (weight>69.9 && weight<=72.6) {
        System.out.println(name + " is Middleweight");
}
```

```
else {
        System.out.println(name + " is unknown");
}
```

5) **Using nested if statements, write a program that prints the smallest value contained in the variables a, b, c.**

```
int a = 1;
int b = 2;
int c = 3;
int smallest;
if (a<b) {
        smallest=a;
}
else {
        smallest=b;
}
if (smallest>c){
        smallest=c;
}
System.out.println(smallest);
```

6) **A sequence of six tests, all scored out of 100, are given different weightings in determining a final mark. Write a program fragment that computes the appropriate weighted score for one test. The fragment should read values of testNumber and score. Using a switch statement, it should then compute and print the appropriate value of weightedScore using the weightings given in the following table.**

Test Number	Weight (total 100%)
1	10%
2	20%
3	20%
4	15%
5	15%
6	20%

SAMPLE OUTPUT
Enter Test number: **3** **Enter Test mark:** **27** **A score of 27on test 3 gives a weighted score of 5.4**

```
		Scanner input= new Scanner (System.in);
		System.out.println("Enter Test number:");
		int testNumber = input.nextInt();
		System.out.println("Enter Test mark:");
		int score = input.nextInt();
		double weightedScore;
		switch(testNumber) {
		case 1:
			weightedScore = score*0.10;
			System.out.println("A score of " + score + " on test" + testNumber
+ " gives a weighted score of " + weightedScore);
			break;

		case 2:
			weightedScore = score*0.20;
			System.out.println("A score of " + score + " on test " + testNumber
+ " gives a weighted score of " + weightedScore);
			break;

		case 3:
			weightedScore = score*0.20;
			System.out.println("A score of " + score + " on test " + testNumber
+ " gives a weighted score of " + weightedScore);
			break;

		case 4:
			weightedScore = score*0.15;
			System.out.println("A score of " + score + " on test " + testNumber
+ " gives a weighted score of " + weightedScore);
			break;

		case 5:
			weightedScore = score*0.15;
			System.out.println("A score of " + score + " on test " + testNumber
+ " gives a weighted score of " + weightedScore);
			break;

		case 6:
			weightedScore = score*0.20;
			System.out.println("A score of " + score + " on test " + testNumber
+ " gives a weighted score of " + weightedScore);
			break;

		default:
			System.out.println("Enter a valid test number or score");
```

}