

1. The cost of a pizza is calculated using the following table:

	Small (\$5.00)	Medium (\$6.00)	Large (\$7.00)
Cost of toppings	\$0.75 per topping	\$1.00 per topping	\$1.25 per topping
1 topping			
2 toppings	\$0.70 per topping	\$0.90 per topping	\$1.15 per topping
3 toppings or more	\$0.65 per topping	\$0.80 per topping	\$1.00 per topping

A delivery charge of \$2.00 is added if applicable. Write a program that prompts the user for the size of a pizza and the number of toppings and provide them with an option for pickup or delivery. The program will use nested if statements to determine the cost of the pizza.

#### Sample Output

```
Enter 'd' for delivery:
s
Pick up is selected
Enter the size of the pizza:
m
Enter the number of toppings on the pizza:
4
The total price for a m pizza with 4 toppings is $9.20
```

```
Scanner input = new Scanner(System.in);
double topping,total;
String delivery,size;
System.out.println("Enter 'd' for delivery:");
delivery = input.nextLine();
if (delivery.equals("d")) {
    System.out.println("Delivery is selected");
    System.out.println("Enter the size of the pizza:");
    size = input.nextLine();
    if (size.equals("s")){
        System.out.println("Enter the number of toppings on
the pizza:");
        topping = input.nextInt();
        if (topping==1) {
            total = (5+(0.75*1)+2);
            System.out.println("The total price for a s
pizza with " + topping + " toppings is " + total);
        }
        if (topping==2) {
            total = (5+(0.70*2)+2);
            System.out.println("The total price for a s
pizza with " + topping + " toppings is " + total);
        }
        if (topping>=3) {
            total = (5+(0.65*topping)+2);
            System.out.println("The total price for a s
pizza with " + topping + " toppings is " + total);
        }
    }
    if (size.equals("m")) {
```

```

        System.out.println("Enter the number of toppings on the
pizza:");
        topping = input.nextDouble();
        if (topping==1) {
            total = (6+(1*1)+2);
            System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
        }
        if (topping==2) {
            total = (6+(0.90*2)+2);
            System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
        }
        if (topping>=3) {
            total = (6+(0.80*topping)+2);
            System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
        }
    }
    if (size.equals("l")) {
        System.out.println("Enter the number of toppings on the
pizza:");
        topping = input.nextDouble();
        if (topping==1) {
            total = (7+(1.25*1)+2);
            System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
        }
        if (topping==2) {
            total = (7+(1.15*2)+2);
            System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
        }
        if (topping>=3) {
            total = (7+(1*topping)+2);
            System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
        }
    }
}
else if(delivery.equals("s")){
    System.out.println("Pick up is selected");
    System.out.println("Enter the size of the pizza:");
    size = input.nextLine();
    if (size.equals("s")){
        System.out.println("Enter the number of toppings on
the pizza:");
        topping = input.nextInt();
        if (topping==1) {
            total = (5+(0.75*1));
            System.out.println("The total price for a s
pizza with " + topping + " toppings is " + total);
        }
        if (topping==2) {
            total = (5+(0.70*2));

```

```

        System.out.println("The total price for a s
pizza with " + topping + " toppings is " + total);
    }
    if (topping>=3) {
        total = (5+(0.65*topping));
        System.out.println("The total price for a s
pizza with " + topping + " toppings is " + total);
    }
}
if (size.equals("m")) {
    System.out.println("Enter the number of toppings on the
pizza:");

    topping = input.nextDouble();
    if (topping==1) {
        total = (6+(1*1));
        System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
    }
    if (topping==2) {
        total = (6+(0.90*2));
        System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
    }
    if (topping>=3) {
        total = (6+(0.80*topping));
        System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
    }
}
if (size.equals("l")) {
    System.out.println("Enter the number of toppings on the
pizza:");

    topping = input.nextDouble();
    if (topping==1) {
        total = (7+(1.25*1));
        System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
    }
    if (topping==2) {
        total = (7+(1.15*2));
        System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
    }
    if (topping>=3) {
        total = (7+(1*topping));
        System.out.println("The total price for a m pizza
with " + topping + " toppings is " + total);
    }
}
}
else {
    System.out.println("Error, invalid order");
}
}

```

2. Write a program that will prompt the user for a mark out of 100. This program will output the appropriate letter grade. No marks below 0 and above 100 will be accepted. A nested structure must be used in your solution.

```
Scanner input = new Scanner(System.in);
double mark;
System.out.println("Enter mark:");
mark = input.nextDouble();
if ((mark>=84) && (mark<=100)) {
    if ((mark>=90) && (mark<=100)) {
        System.out.print("The letter grade for " +
mark + " is A+");
    }
    else if((mark>=85) && (mark<=89));{
        System.out.print("The letter grade for " + mark + "
is A");
    }
    if((mark>=80) && (mark<=84));{
        System.out.print("The letter grade for " + mark + "
is A-");
    }
}
}

if ((mark>=65) && (mark<=79)) {
    if ((mark>=75) && (mark<=79)) {
        System.out.print("The letter grade for " + mark + "
is B+");
    }
    else if ((mark>=70) && (mark<=74)) {
        System.out.print("The letter grade for " + mark + "
is B");
    }
    else if ((mark>=65) && (mark<=69)) {
        System.out.print("The letter grade for " + mark + "
is B-");
    }
}
}

if ((mark>=50) && (mark<=64)) {
    if ((mark>=60) && (mark<=64)) {
        System.out.print("The letter grade for " + mark + "
is C+");
    }
    else if ((mark>=56) && (mark<=59)) {
        System.out.print("The letter grade for " + mark + "
is C");
    }
    else if ((mark>=50) && (mark<=55)){
        System.out.print("The letter grade for " + mark + "
is C-");
    }
}
}

if ((mark>=0) && (mark<=49)){
    System.out.print("The letter grade for " + mark + " is
D");
}
```

3. Pacman is very hungry and has gobbled up 52 pellets already. Using a nested selection structure, 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);
int gobbled,total;
String p;
gobbled = 52;
System.out.println("Enter amount of pellets to feed Pacman (no half
pellets please):");
p = input.nextLine();
if (p.indexOf(".")!=-1) {
    int pellets = Integer.parseInt(p);
    total = (gobbled + pellets);
    if (total<=100) {
        System.out.println("I'm still hungry. FEED me
MORE!!");
    }
    else if((total>=101) && (total<=150)) {
        System.out.println("Thanks!");
    }
    else if (total>151) {
        System.out.println("no more please. I'm full");
    }
}
else {
    System.out.println("Error, no half pellets please");
}
```

4. 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 10 cents each in excess of 150 cones. If he sells over 250 cones, he earns 25 cents per cone over 250. If he sells over 350 cones, he receives 35 cents per cone over 350. Write a program that prompts for the number of cones sold per week and calculate and output his bonus. A nested structure needs to be used.

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

```
Scanner input = new Scanner(System.in);
double cones,bonus;
System.out.println("Enter the number of cones sold:");
cones = input.nextInt();
if (cones>=150) {
```

```

        if (cones>350) {
            bonus = (((cones-350)*0.35)+10);
            System.out.println("He will earn $" + bonus + " If
he sells " + cones + " cones.");
        }
        else if (cones>=250) {
            bonus = (((cones-250)*0.25)+10);
            System.out.println("He will earn $" + bonus + " If he
sells " + cones + " cones.");
        }
        else if (cones>=150) {
            bonus = (((cones-150)*0.10)+10);
            System.out.println("He will earn $" + bonus + " If he
sells " + cones + " cones.");
        }
    }

    else {
        System.out.println("invalid input of cones");
    }
}

```