

COP 3330 Suggested Exercises for Output, Vars, Input, Assignment Statement

Printing

1) Play around with printing, specifically the '\t' character and give a description of exactly how it works.

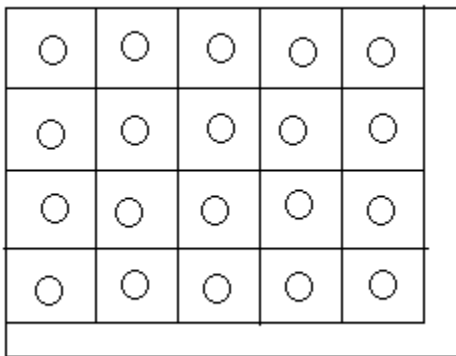
Variables, Input, Assignment Statement

2) Write a program that prompts the user to enter two points on the Cartesian plane with different x coordinates and calculates the slope of the line through those points.

3) Write a program that asks the user for the price of gasoline per gallon, the number of gallons of gas currently in their car, the miles per gallon their car gets, and the length of their road trip in miles and calculates and prints out the amount the user will have to spend on extra gas to complete the road trip. (You may assume that the user will have to buy some gas to complete the trip.)

4) Imagine a two-way straight railway and two trains approaching each other from opposite directions. You need to compute how long (in minutes) it would take for these trains to come side by side. You will also compute how many miles each train travels till then. Write a program to read in the distance (in miles), speeds of the trains (in miles per hour), and output the time to meet (in minutes) and the distance traveled by each train (in miles).

5) You want to have a program that calculates the number of pepperonis to place on rectangular pizzas. For each pizza, you want the user to be able to choose the “density” of pepperonis according to the following design:



Essentially, each pepperoni is roughly centered in a square of the pizza of some given size (perhaps 35 mm by 35 mm). We portion the rectangular pizza into as many rows and columns as we can, of this fixed size. Each of these square cells of the pizza get one piece of pepperoni. Depending on the dimensions of the pizza, some room may be leftover on the right side and bottom of the pizza that are too small to form the squares desired. These areas do not get any pepperonis.

Write a program that takes in the length and width of the pizza in millimeters, as well as the size of the bounding square for one pepperoni, in millimeters, and calculates the total number of pepperonis needed for the pizza.