Potential Test Questions

Geometry

Level 1

Name: `calcMissingTriangleAngle`
Input: `double angle1, double angle2`
Output: `double missingAngle`
Action: `Calculates the value of the third angle given the measure of the first two`

Level 2

Name: `calcGeometricMean`
Input: `double val1, double val2`
Output: `double geometricMean`
Action: `Calculates the geometric mean of val1 and val2`

Name: `surfaceArea`
Input: `double height, double width, double length`
Output: `double surfaceArea`
Action: `returns the surface area of a rectangular prism`

Name: `calcRectPerimeter`
Input: `double width, double height`
Output: `double perimeter`
Action: `returns perimeter of rectangle with given width & height`

Level 3

Name: `findCircleRadius`
Input: `double area`
Output: `double radius`
Action: `returns length of the second leg of a right triangle`

Name: `findLeg`
Input: `double leg1, double hypotenuse`
Output: `double leg2`
Action: `returns length of the second leg of a right triangle`

Level 4

Name: `findModelPartSize`
Input: `double realLifeSize, double modelSize, double realLifePartSize`
Output: `modelPartSize`

Action: `returns the size that a part of a model needs to be given the size of the part in real life, the modelSize, and the size of the whole thing in realLife`

Level 5

Level 6

Name: `calcHeightOfTrapezoid`
Input: `double base1, double base2, double leg1, double leg2`
Output: `double height`
Action: `Calculates the height of a trapezoid given the measure of all the sides`

Algebra

Level 1

Name: `sum`
Input: `double num1, double num2, double num3`
Output: `double sum`
Action: `returns the sum of the three numbers passed in`

Name: `product`
Input: `double num1, double num2, double num3`
Output: `double product`
Action: `returns the product of the three numbers passed in`

Name: `average`
Input: `double num1, double num2, double num3`
Output: `double average`
Action: `returns the average of the three numbers passed in`

Level 2

```
Name:    pointDifference
Input:   int score1, int score2
Output:  double difference
Action:  returns how many points the winner won by(always
     positive)
```

Level 3

```
Name:    findX
Input:   double y, double m, double b
Output:  double x
Action:  returns the x value, given the y value, slope (m),
     and y-intercept of a line (b)
```

```
Name:    findValue1
Input:   double average, double value2,
Output:  double value1
Action:  returns value1 given that average is equal to the
     average of value1 and value2
```

```
Name:    getXValueOfVertex
Input:   double a, double b, double c,
Output:  double xValue
Action:  Calculated what the x value of the vertex would be of
    the given parabolic equation:
    f(x) = ax^2 + bx + c

Name:    getYValueOfVertex
Input:   double a, double b, double c,
Output:  double yValue
Action:  Calculated what the y value of the vertex would be of
    the given parabolic equation:
    f(x) = ax^2 + bx + c
```

Level 4

Level 5
Level 6

Physics

Level 1

Level 2

Name: calcForce
Input: double mass, double acceleration
Output: double product
Action: returns force given that F=ma

Level 3

Level 4

Name: calcTotalDistance
Input: double acceleration, double velocity, double startingDis, double time
Output: double distance
Action: returns the distance an object traveled given a constant acceleration, a starting velocity, and a starting distance. $S = S_0 + vt + (\frac{1}{2})at^2$

Level 5

Level 6

Purchase Price

Level 1

Name: findCost
Input: double numFlowers, double flowerCost, double discount
Output: double cost
Action: returns the cost to purchase the indicated number of flowers. The discount passed in is taken off the cost of each flower. So 5 flowers that cost 3 dollars each with a discount of 1 dollar results in a cost of 10 dollars.

Name: findCost
Input: double numCogs
Output: double cost
Action: returns the cost to install numCogs into a whatsit. The labor will cost $100 and each cog will cost $30

Name: findCost
Input: double numCoupons
Output: double cost
Action: returns the cost to buy a whatsit. The whatsit cost $149 and each coupon submitted will take $25 off the price.

Name: findCost
Input: int numRegular, int numDiscounted
Output: double cost
Action: returns the total cost to purchase the indicated number of tickets. Regular tickets cost 7 dollars and discounted tickets cost 3.5 dollars.

Name: findNumBricksNeeded
Input: int numRows
Output: int numBricks
Action: returns how many bricks are needed to construct the pyramid that is numRows tall. The top row has one brick. Each row also has one more than the row above. You are not allowed to use if statements or loops.