Maria Litvin's and Gary Litvin's
Solutions to the 2020 Exam SAMPLE Questions

Question 1

Part (a)

```
public int countElectronicsByMaker(String maker)
{
  int count = 0;

  for (Gizmo g : purchases)
  {
    if (g.isElectronic() && g.getMaker().equals(maker))
      count++;
  }
  return count;
}
```

Part (b)

```
public boolean hasAdjacentEqualPair()
{
  for (int i = 1; i < purchases.size(); i++)
  {
    if (purchases.get(i).equals(purchases.get(i-1))
      return true;
  }
  return false;
}
```

Part (c)

```
public Gizmo getCheapestGizmoByMaker(String maker)
```

- Add a `private double` instance variable `price` to the `Gizmo` class that will hold this `Gizmo`'s price.
- Add an accessor method `public double getPrice()` that returns this `Gizmo`'s price.
- Modify at least one of the `Gizmo`'s constructors to take an additional parameter of the type `double` and set this Gizmo's price to the value of that parameter. Alternatively add a method `public void setPrice(double pr)` that sets this `Gizmo`'s price to `pr`.

The names of the proposed variables and methods are suggestions only.

Question 2

Part (a)

```
public static boolean isValid(int numWithCheckDigit)
{
  return getCheck(numWithCheckDigit / 10) == numWithCheckDigit % 10;
}
```

Notes:

Or:

```
  int num = numWithCheckDigit / 10;
  int checkD = numWithCheckDigit % 10;
  return getCheck(num) == checkD;
```

Part (b)

We guess the following answer would earn full credit:

- Add a `private static int` variable `invalidCount` to the `CheckDigit` class. (Set `invalidCount` to zero or rely on the default value.)
- Increment `invalidCount` in the `isValid` method each time the check digit in the `isValid`'s parameter is invalid.
- Add a `public static int` method `getInvalidCount` that returns `invalidCount`.

The names of the proposed variables and methods are suggestions only.