

Starter Quiz ·

GAC Mathematics

Name: _____ Score: _____

1. An investment grows by 4% each year. Which family is it?
- ☐ Both

☐ Arithmetic

☐ Geometric

☐ Neither
2. Which figure should a personal budget be built on?
- ☐ Gross pay

☐ Net pay

☐ The advertised salary

☐ Either
3. Under a no-interim-payment model, compare 10000 at 9% compounded annually for 3 years with a nominal 8.7% annual rate compounded monthly for 3 years. Which final amount is higher?
- ☐ It cannot be compared

☐ They cost the same

☐ The 9% annual-compounding amount

☐ The nominal 8.7% annual rate, compounded monthly
4. A question asks for P(at least one). What is usually the fastest route?
- ☐ Add the individual probabilities

☐ Find P(none) and subtract from 1

☐ List every favourable case

☐ Multiply the individual probabilities
5. To study canteen preferences across a school, which listed selection plan best covers the full student population?
- ☐ Your own class

☐ Students who complain

☐ The queue at 12:30

☐ Every tenth name on the roll

- _____
7. Treat 58, 60, 62 as the complete population. Find its population standard deviation to 2 decimal places.
- _____
8. Under a normal model, approximately what percentage lies within two standard deviations of the mean, using the rounded empirical rule?
- _____
9. An arithmetic sequence starts at 5 with common difference 3. What is the 10th term?
- _____
10. 240 rises by 15%, then the new price falls by 15%. What is the final value, to 2 decimal places?
- _____

1. **Geometric**

A percentage is a factor, not an amount, so each year multiplies by 1.04.

2. **Net pay**

Net is what actually arrives. A budget built on gross is short by the deductions before it starts.

3. **The nominal 8.7% annual rate, compounded monthly**

Annual compounding gives 12950.29; monthly compounding gives about 12970.06. The second is higher by about 19.77 under the stated no-payment and no-fee model.

4. **Find P(none) and subtract from 1**

There is usually one way to get none and many ways to get at least one.

5. **Every tenth name on the roll**

Selection from the full roll can include nonusers. A systematic every-tenth-name plan needs a random start and a check for patterns; nonresponse remains a limitation, so it does not guarantee perfect representativeness.

6. **30000**

Ordered, the middle values are both 30000. The single large value does not move it.

7. **1.63**

Use the population divisor 3: $\sqrt{((4 + 0 + 4)/3)} = \sqrt{(8/3)} \approx 1.63$, in the original units.

8. **95**

The rounded empirical rule gives about 95%. A cumulative normal table gives a more precise area, so do not treat this rounded value as exact.

9. **32**

$u_{10} = 5 + 9 \times 3 = 32$. Nine steps from the first term, not ten.

10. **234.6**

$240 \times 1.15 \times 0.85 = 234.60$. The two percentages act on different amounts.