# 2. Algebra

**Starter Quiz ·**

AQA · GCSE · Mathematics Name: _____ Score: _____

1. Solve 5x-7=18.

   _____

2. Solve x+y=12 and 3x+2y=31. Find x.

   _____

3. For a=5,d=3, find u_8.

   _____

4. Find the coefficient of x in 3x+4x.

   _____

5. Find the coefficient of x in 3(x+2)-x.

   _____

6. Every quadratic function on all real numbers has an inverse function.

   ☐ True ☐ False

7. The graph y=f(x+3) moves three units to the right.

   ☐ True ☐ False

8. The tangent is perpendicular to the radius, so its gradient is the negative reciprocal of the radius gradient.

   ☐ True ☐ False

9. A dashed inequality boundary includes every point on its line.

   ☐ True ☐ False

10. Cancelling a denominator factor makes its excluded input valid.

    ☐ True ☐ False

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**Answers** ·

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1. **5.0**

   Add 7 then divide by 5: x=(18+7)/5=5.

2. **7.0**

   Subtract twice x+y=12 from 3x+2y=31: x=31-24=7.

3. **26.0**

   $u_8$=5+(8-1)×3=26.

4. **7.0**

   Add coefficients 3+4.

5. **2.0**

   Expand then collect: 3x-x=2x.

6. **False**

   A quadratic on all real numbers is many-to-one (f(1)=f(−1) for $x^2$), so its domain must be restricted first.

7. **False**

   f(x+3) moves the graph three units to the left.

8. **True**

   True. The tangent is perpendicular to the radius, so its gradient is the negative reciprocal of the radius gradient.

9. **False**

   A dashed boundary is not included; a solid boundary is included.

10. **False**

    An input that makes the original denominator zero stays excluded, even after cancelling.