

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 $y=f(x+3)$ always moves three units to the right.

☐ True ☐ False

8. The tangent at a circle point has the same gradient as the radius to that point.

☐ True ☐ False

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

☐ True ☐ False

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

☐ True ☐ False

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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**

$u_8=5+(8-1)\times 3=26$.

4. **7.0**

Add coefficients $3+4$.

5. **2.0**

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

6. **False**

Squaring can introduce extraneous solutions. Restricting a parabola's domain is essential before claiming an inverse. A horizontal translation inside f has the opposite sign to the graph's movement.

7. **False**

A positive number added inside the input, $f(x+3)$, moves the graph left, not right. A reflection in the y -axis changes x ; a reflection in the x -axis changes y .

8. **False**

The radius and tangent share a point but different directions. Do not use the negative reciprocal of zero; a horizontal radius has a vertical tangent. Check the tangent passes through its contact point.

9. **False**

For an upward-opening quadratic, positive values lie outside the roots, not between them. A boundary intersection is not necessarily included. Use a test point not on the boundary itself.

10. **False**

Never cancel the x in $(x+2)/x$. A simplified denominator does not show all original restrictions. In a division task, check when the divisor is zero. Cross-multiplication can produce an excluded candidate; a formal root is not automatically a solution.