Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_\_\_\_

Algebra 2 3rd 6 Weeks Test Review DO ON YOUR OWN PAPER

Simplify. No decimals.

|  |  |  |
| --- | --- | --- |
| 1.  | 2.  | 3.  |
| 4.  | 5.  |
| 6. $\sqrt{\frac{10}{45}}$ | 7. $\sqrt{\frac{12}{4}}$ |

Simplify. Show your work.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8. $ \sqrt{-9}$  | $9. \sqrt{-50}$  | 10. $i^{73}$ | 11. -4$i^{55}$ | 12. $\sqrt{-4}\sqrt{-9}$ |
| 13. $\sqrt{-2}$ $\sqrt{24}$ | 14. (-2i)(5i) | 15. 2i(4 – 2i) | 16.  (2 – 3i) + (3 + 4i) | 17. (6 – 8i) – (2 – 4i) |
| 18. (5 + 3i)(4 – i) |

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| 19.  $\frac{3+2i}{4-i}$ |

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| 20.  $\frac{2}{3+4i}$ |

 | 21. $\frac{6}{5i}$ | 22.  $\frac{4+3i}{-3i}$ |

Solve by taking the square root of both sides of the equation. Show your work.

|  |  |
| --- | --- |
| 23. $2x^{2}$ + 72 = 0 | 24. $x^{2}+9=-11$ |

Completing the square

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| 25. Find the value that completes the square and rewrite as a perfect square.$x^{2}- 8x+\\_\\_\\_\\_$ = $( )^{2}$ |

Solve by completing the square. Show your work.

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| 26. $x^{2}$ - 4x = 8 |

$$\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$

Solve using the quadratic formula. Show all work.

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| 27. $x^{2}$ - 3x – 5 = 0 | 28. $2x^{2}$ - x = 3 | 29. $x^{2}$ = 2x + 4 |

State the discriminant. Then state how many roots there are: 1 real, 2 real. or 2 complex.

$$b^{2}-4ac$$

|  |  |  |
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| 30. $x^{2}$ + 4x + 6 = 0 | 31. $4x^{2}$ + 12x = - 9 | 32. $x^{2}$ = x + 1 |

IX. Find the axis of symmetry, vertex, y intercept, Then state the maximum or minimum value, sketch a graph. $x=\frac{-b}{2a}$

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| 33.  |
| 34. $f\left(x\right)=x^{2}+2x-3$ |

X. Factor:

|  |  |  |  |
| --- | --- | --- | --- |
| 35.  | 36.  | 37.  | 38.  |

XI. Find the zeros: use any method by hand and check with the calculator.

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| 39.  | 40.  |