|  |  |
| --- | --- |
| 1. Factor completely: $$x^{2}+10x+24$$ | 2. Factor completely:$$3x^{2}-15x-72$$ |
| 3. Factor completely:$$x^{2}+16$$ | 4. Factor completely:$$16x^{2}-81$$ |
| 5. Factor completely:$$2x^{2}+7x+3$$ | 6. Factor completely:$$x^{3}+4x^{2}+8x+32$$ |
| 7. Factor completely:$$5x^{3}-15x^{2}$$ | 8. Factor completely:$$x^{3}-5x^{2}-4x+20$$ |
| 9. Factor completely:    | 10. Simplify completely:$$\left(12+14i\right)-(17+8i)$$ |
| 11. Simplify completely:$$(3-2i)(4+5i)$$ | 12. Simplify completely:$$(2+5i)^{2}$$ |
| 13. Simplify completely:$$\frac{-5+2i}{6-3i}$$ | 14. Simplify completely:$$-\frac{5}{2i}$$ |

|  |  |
| --- | --- |
| 15. Domain \_\_\_\_\_\_\_\_\_\_\_ Range \_\_\_\_\_\_\_\_\_\_\_\_Extrema \_\_\_\_\_\_\_\_\_\_\_\_\_ AOS \_\_\_\_\_\_\_\_\_Inc. \_\_\_\_\_\_\_\_\_\_ Dec \_\_\_\_\_\_\_\_\_\_Y – Int \_\_\_\_\_\_\_\_ X - ints \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ End Behavior [image] | 16. Sketch a graph with the following characteristics:Extrema (-1, 4)Increasing $(-\infty ,-1)$Decreasing $(-1, \infty )$Extrema (1, -4)Roots at (-1, 0) (3, 0) |
| Into which group or groups does each number go?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Natural | Whole | Integers | Rational | Irrational | Real | Imaginary | Complex |
| 4/9 |  |  |  |  |  |  |  |  |
| 8-3i |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |

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