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| Chapter 1: Graphs from a Calculus Perspective  |
| 1. | State the domain and range of the function: A: Domain:  Range:  | 2. | State the domain and range of the function: A: Domain: Range:  |
| 3. | Is the following a function? 11Pcal_01_02_00_01_aA: No, does not pass vertical line test | 4. | Evaluate the following: A:  |
| 5. | What is the domain and range? 11Pcal_01_02_02_A_aA: Domain: Range:  | 6. | What type of symmetry does this function have? Confirm this algebraically. Would you describe this function as even, odd, or neither? 11Pcal_01_02_05_A_eA: Symmetric with respect to origin, odd |
| 7. |   What type of symmetry does f(x) have? Could you describe this function as even or odd?A: No symmetry, not odd or even | 8. | Determine whether the function  is continuous at . Justify your answer using a table and if there is a discontinuity specify the type. A: Removeable discontinuity |
| 9. | Determine whether the function  is continuous at . Justify your answer using a table and if there is a discontinuity specify the type. A: Infinite  | 10. | Find the average rate of change of  on the interval [–3, –1].A: 12 |
| 11. | Describe the end behavior of the graph using limits. Find any extrema and classify them. State the intervals where the graph is increasing and decreasing. 11Pcal_01_04_01_A_eA:  Relative min (-1.232,-7.931)Relative max (2.152,14.570) | 12. | Describe the end behavior of the graph using limits. Use your graphing calculator to find any extrema and classify them. State the intervals where the graph is increasing and decreasing. 11Pcal_01_03_05_B_aA:  Relative min (-1.215, 3.113)Relative max (0.549, 0.369) |
| 13. | Describe the following characteristics of the graph of the parent function :Domain, Range, Intercepts, symmetry, continuity, end behavior, intervals on which the graph is increasing and decreasing. |  | Write the equation of the graph of  that is being horizontally dilated by a factor of  , vertically dilated by a factor of 3 and reflected across the y-axis. A:  |
| Domain: Range: *x-* and *y-* intercepts (0,0)Horizontal SymmetryContinuous |  |

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| 15. | Use the graph of to graph: |  |
|  | a.) A:  | b.) A:  |
| 16. | Given  and  find: |  |
|  | a.) A:  | b.) A:  | c.) A:  | d.) A:  |
| 17. | Graph  and apply the horizontal line test to determine whether its inverse function exits. Is the function one to one?A: No, not one to one |
| 18. | Find the inverse of A:  |
| 19. | Verify that and  are inverse functions.A:  and  |
| 20. | Graph and use that graph to sketch it inverse function.A: |

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| Chapter 2 Power, Polynomial, and Rational Functions  |
| 1. | Simplify a. A: b. A:  | 2. | Simplifya.A: b. A:  |
| 3. | For  use your knowledge of the zeros and the end behavior to make a sketch of the graph. A: 11Pcal_02_02_06_A_d | 4. | Describe the end behavior ofusing the leading term test. How many possible zeros are there? How many possible turning points does this graph have?A:  Possible Real Zeros: 4Possible Turning points: 3 |
| 5. | Factor using long division if is a factor. A:  | 6. | Divide by  using long division. A:   |
| 7. | Divide by A:  | 8. | Find the remainder when is divided by . What does this remainder tell you about the original function? A: 4, this tells you that (3,4) is a coordinate on the graph of the function and that 3 is not a root of the function |
| 9. | Confirm that and factors of . Then rewrite f(x) in factored form. A:  | 10. | For f(x) how many possible zeros are there? List all of the possible rational zeros. . Which ones are actually zeros? A: Actual zeros:  |

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| 11. | Find the domain and the equations of any vertical or horizontal asymptotes or holes: A: Vertical asymptote at *x* = -2 Horizontal Asymptote – none Holes - NoneDomain:  | 12. | Determine any asymptotes, holes, and what the intercepts are, then graph: a) A: a) Vertical Asymptote:  Horizontal Asymptote:  Hole:  *x-*intercept - b) A: b) Vertical Asymptotes:  Horizontal Asymptote:  Hole: None  *x-*intercepts -  *y*-intercept -   11Pcal_02_05_03_A_a |
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