This practice exam is for review purposes only; the actual exam may differ in format and content. Use it as a study aid, and refer to the syllabus for specific details. Solutions with explanations can be found on my YouTube channel. - Robert Pearce

Name:_____

1. Factor the polynomial: $-7x^2y^3 - 28xy^2 - 35xy$

2. Factor the polynomial by grouping: $3x^3 - 12x^2 + 4x - 16$

3. Factor the polynomial: $x^2 + 24x + 23$

4. Factor the polynomial: $-3x^2 + 2x + 8$

5. Factor the polynomial: $25x^2 - 64$

6. Factor the polynomial: $8x^3 + 27$

7. For the function $f(x) = 3x^2 + 3$ find the average rate of change from:

a) -2 to 0

b) 4 to 6

c) -2 to 1

Cont.

8. Rewrite the function: $y = \sqrt{x}$ but shifted down 2 units.

9. Given the function $f(x) = \begin{cases} x^2 & \text{if } x < 0 \\ 0 & \text{if } x = 0 \\ 3x + 2 & \text{if } x > 0 \end{cases}$

a) $f(-1)$

b) $f(0)$

c) $f(3)$

10. Find the vertex and axis of symmetry: $g(x) = -2(x - 2)^2 + 1$

Cont.

11. Determine whether the quadratic function has a max/ min and find the value without graphing: $f(x) = 6x^2 + 12x + 3$

12. Perform the operation and write the expression in standard form: i^3

13. Solve the following equation using the square root method: $(4y + 8)^2 = 64$

14. Solve the equation: $x^2 - 14x + 58 = 0$

The End.