

The Factor Theorem – in book: Section 7.4 p. 459

Find the real zeros of each function, then factor the function completely.

1. $f(x) = x^3 + 2x^2 - 15x$

2. $f(x) = 2x^2 - 9x + 4$

3. $f(x) = 2x^3 - 7x^2 - 18x + 63$

4. $f(x) = x^3 + 4x^2 - 3x - 18$

5. $f(x) = 3x^3 - 5x^2 + 2x$

6. $f(x) = x^5 - 10x^4 + 25x^3 + 20x^2 - 80x - 64$

Write the polynomial equation of least degree for each set of roots given. Then give an alternative equation that has the same roots.

7. $-3, 2$

8. $-2, -\frac{1}{2}, 4$

9. $0, 3, -2.5, \frac{5}{6}$

10. The x -intercepts of the graph $y = p(x)$ where $p(x)$ is a polynomial degree 3, are $-4, 2$ and -5 . The y -intercept is 10 . Find an equation of least degree.