

1. Find the quotient and remainder of $x^4 - x^3 - 8x^2 + 2x + 12$ divided by $x^2 - 4x + 3$.

2. Find the quotient and remainder of $2x^3 - x^2 - 5x + 4$ divided by $x - 2$.

[If you had difficulty answering these questions, review section A.4 in the textbook.]

3. Simplify:

(a) $\pi + (1 - i)i$;

(b) $(1 - 2i)(2 + 3i)$;

(c) $(3 + 4i)(\overline{3 + 4i})$.

[Review section A.6.]

4. Describe the sequence of transformations that turns the graph of $y = f(x)$ into the graph of $y = -f(\frac{x}{3} - 1) + 2$.

[Review section 2.5.]

5. Knowing that f is an invertible function, with domain $[0, 4]$ and range $[-2, 3]$:

(a) What's the range and domain of f^{-1} ?

(b) What is $f^{-1}(f(3))$?

(c) If $f(3x) = 2$ and $f^{-1}(2) = 1$, what is $3x$? What is x ?

[Review section 4.2.]

6. Write an equation for the circle with center $(2, 3)$ and radius 5.

7. What is the center of the circle $x^2 - 2x + 1 + y^2 = 1$? [Hint: complete the square.]

[Review section 1.2.]

8. Write an equation for the line through point $(1, -2)$ and parallel to the line $3x + y = 10$.

[Review section 1.3.]