

Mate 3021 practice problems

§1.1: Exercises 1–8.

§1.1: 13, 18, 26.

§1.1: 30, 31, 36, 38, 39, 45, 48, 52, 53, 56, 66, 67, 70.

§1.2: 1, 3, 4, 5, 8, 13, 15, 16.

Hint for 8(a): $f(x) = a(x - 3)^2 + b$. Since $b = 0$ (why?), a is determined by $f(4) = 2$.

§1.3: 2–4, 17, 19 (complete the square), 31–36, 39–42, 45, 48, 49.

§1.4: 1, 4, 5, 8, 11, 12, 21, 22, 25, 30, 33, 37.

Hint for 21: using the algebra of powers, $f(3)/f(1) = b$ to which power?

Hint for 37: multiply both sides of the fraction $f(-x)$ by $e^{1/x}$, and compare with $f(x)$.

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§1.5: all exercises from syllabus. Starred: 11, 18, 22, 30, 31, 45, 48, 55, 60.

§1.6: 1, 2, 4, 12*, 14*, 15, 20, 22*, 24, 25, 28*, 32*. For 28 and 32, compute only five terms.

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§2.1: 1, 3, 4, 6, 9, 13*, 21, 24*, 31 (plot), 34*, 35*, 36*.

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§2.2: 5, 6, 10, 13, 16, 18, 20, 25–27, 31, 34, 36.