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PROBLEM SET 3

1. Evaluate the next limits. Choose 1 of them and hand it in \LaTeX form.

(a)

$$\lim_{t \rightarrow 1} \frac{t^3 - t}{t^2 - 1}$$

(b)

$$\lim_{g \rightarrow 0} \frac{(g - 5)^2 - 25}{g}$$

(c)

$$\lim_{h \rightarrow 0} \frac{\sqrt{2-h} - \sqrt{2}}{h}$$

(d)

$$\lim_{i \rightarrow 1} \frac{i^2 + i - 2}{i^2 - 3i + 2}$$

(e)

$$\lim_{j \rightarrow 9} \frac{j^2 - 81}{\sqrt{j} - 3}$$

2. Find the next derivatives. Choose 1 of them and hand it in \LaTeX form.

(a) 2015

(b) x

(c) $4x^3 - 3x^2 + 2x$

(d) $5h^2 \cdot 2h^3$

(e) $\frac{x^2}{3x^2} - \frac{3}{3x^2}$

(f) $\frac{6y^2 + 12y + 4}{(2y - 10)^2}$