

## MA140: Engineering Calculus

### Week 3: Collection of Exercises And answers!

*This is a collection of exercises from this week's MA140 lectures. You don't have to submit solutions for these, but you should work through them. Some may be similar to questions on the final exam.*

1 Week 03, Lecture 1

2 Week 03, Lecture 2

### Exercise 3.1.1 (from 2023/24 Q1(b))

Evaluate

$$\lim_{\theta \rightarrow 0} \frac{2 \sin(\theta)}{\theta + 3 \tan(\theta)}$$

Ans:  $1/3$

### Exercise 3.2.1

Find all the vertical asymptotes of  $f(x) = \frac{x+2}{x^2+2x-8}$ .

**Answer:** There are two asymptotes: one at  $x = -4$  and the other at  $x = 2$

