

Lecture section: _____

Student Number: _____

PUT ANSWERS IN BOXES. NO BOOKS/NOTES/CALCULATORS. DO YOUR OWN WORK.
Simplify answers where possible. Include units where needed. All angles are in radians. $\log = \log_{10}$.

1. Find the equation of the line with x -intercept 2 and y -intercept -3 in *slope-intercept* form.

2. Find the value of:

$$\arccos(-1)$$

3. Solve for x :

$$\frac{x+2}{x-3} = 5$$

4. Rewrite by completing the square: $y^2 - 6y - 9$

5. Find the value of:

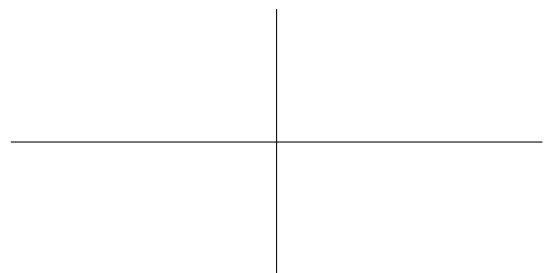
$$\tan(\pi)$$

6. Simplify as far as you can:

$$\ln(3x^2) - \ln(3x)$$

7. Graph the function $y = e^{-x}$.

Label with the following values (if applicable): each intercept, location of each asymptote, and (x, y) coordinates of each min and max. Also include the coordinates of one other point.



8. Solve for x (write answer as a rational number):

$$\left(\frac{2}{3}\right)^x = \frac{9}{4}$$

9. If $f(t) = 6t^5 - 2t^4 + 8t^3 + 9$, find $f'(t)$.

10. If $y = \frac{1}{x}$, find dy/dx .

11. If $f(x) = e^{x^2}$, find $f'(x)$.

12. If $f(\theta) = \tan(\theta + 1)$, find $f'(\theta)$.

13. Find the derivative of

$$g(t) = 3t^4 e^t$$

14. Find the derivative of

$$f(x) = \frac{1 - e^x}{x^2 + 1}$$

15. Find the derivative of

$$f(t) = \frac{\cos(t)}{t}$$

16. Find a function $f(x)$ whose derivative is:

$$f'(x) = x + \frac{1}{\sqrt{x}}$$

17. Evaluate the indefinite integral:

$$\int \frac{1}{3 - x} dx$$

18. Evaluate the indefinite integral:

$$\int x^3 e^{x^4 - 2} dx$$

19. Evaluate the definite integral:

$$\int_1^2 (2x^2 + 1) dx$$

20. Evaluate the definite integral:

$$\int_1^2 \frac{1}{x} dx$$