

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 through the point (1,7) with slope 1 in *slope-intercept* form.

2. Find the value of:

$$\arctan(-1)$$

3. Solve for x :

$$\frac{x-2}{5} = \frac{x+4}{20}$$

4. Rewrite by completing the square: $3r^2 - 6r - 1$

5. Find the value of:

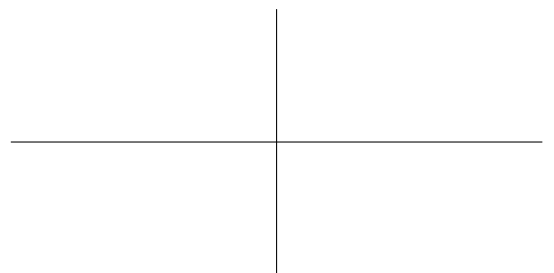
$$\arccos(-1)$$

6. Solve for t :

$$e^{3t} - a^3 = 0$$

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 t (write answer as a rational number):

$$100^{3t+2} = 10$$

9. If $f(s) = 5s^3 - 2s^2 - 7s + 9$, find $f'(s)$.

10. If $g(\theta) = \cos(\theta)$, find $g'(\theta)$.

11. If $y = \tan^5(\theta)$, find $dy/d\theta$.

12. If $z = \tan^3(t)$, find dz/dt .

13. Find the derivative of

$$f(x) = 4e^x \cos(x)$$

14. Find the derivative of

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

15. Find the derivative of

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

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

$$f'(t) = \sqrt{t} + \frac{2}{t}$$

17. Evaluate the indefinite integral:

$$\int (2-x)^4 dx$$

18. Evaluate the indefinite integral:

$$\int e^t \sin(e^t) dt$$

19. Evaluate the definite integral:

$$\int_0^2 (6x^2 - x) dx$$

20. Evaluate the definite integral:

$$\int_1^2 e^{-x} dx$$