Calculus ABC Test II—Version 938   **Name:** _____

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 (2,5) with slope 0 in *slope-intercept* form.

2. Find the value of:

$$\arcsin\left(-1\right)$$

3. Solve for x:
$$x^2 = 6x$$

4. Rewrite by completing the square: $2x^2 - 6x$
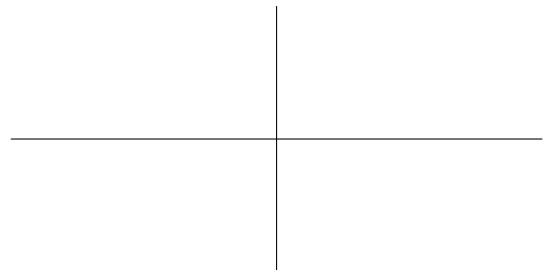
5. Find the value of:

$$\arcsin\left(0\right)$$

6. Simplify as far as you can:

$$e^{3\ln(5)}$$

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:
$$\log(3t + 5) = 2$$

9. If $f(s) = 3s^4 + 7s^3 - 5s^2 + 1$, find $f'(s)$.

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

11. If $F(x) = \ln(x^2)$, find $F'(x)$.

12. If $f(t) = \tan(e^t + 1)$, find $f'(t)$.

13. Find the derivative of

$$f(x) = (x - x^2)\tan(x)$$

14. Find the derivative of

$$f(\theta) = \frac{\theta^2}{\sin(\theta)}$$

15. Find the derivative of

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

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

$$f'(t) = \frac{3}{t} - 3\sqrt{t}$$

17. Evaluate the indefinite integral:

$$\int \frac{1}{e^t}\, dt$$

18. Evaluate the indefinite integral:

$$\int t\sqrt{t^2 + 1}\, dt$$

19. Evaluate the definite integral:

$$\int_0^2 (3x^2 - 2x)\, dx$$

20. Evaluate the definite integral:

$$\int_{-\pi/4}^0 \cos(2t)\, dt$$