Calculus ABC Test II—Version 2617   **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 with x-intercept 2 and y-intercept -3 in *point-slope* form.

2. Find the value of:
$$\arcsin(-1)$$

3. Solve for x:
$$\sqrt{x} - 5 = 7$$

4. Rewrite by completing the square: $x^2 - 8x + 13$
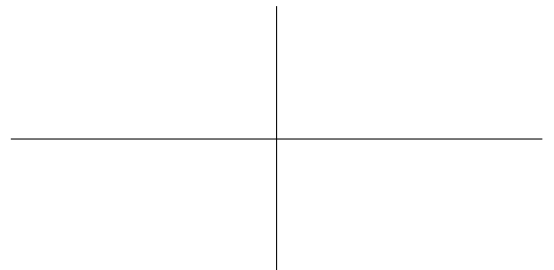
5. Find the value of:
$$\cos\left(\frac{\pi}{2}\right)$$

6. Solve for y:
$$4 + \ln(y) = 18$$

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 y (write answer as a rational number):
$$4^y = 8$$

9. If $f(x) = 2x^5 + 7x^3 - 8x + 17$, find $f'(x)$.

10. If $y = \sin(\theta)$, find $dy/d\theta$.

11. If $f(x) = 3\tan(2x)$, find $f'(x)$.

12. If $g(\theta) = \sin(\theta^2 + \theta)$, find $g'(\theta)$.

13. Find the derivative of
$$g(\theta) = (\theta + \pi)\cos(\theta)$$

14. Find the derivative of
$$f(t) = \frac{t}{e^t}$$

15. Find the derivative of
$$f(t) = \frac{t+1}{t^{3/2}}$$

16. Find a function $f(t)$ whose derivative is:
$$f'(t) = \cos(t) - \frac{1}{t}$$

17. Evaluate the indefinite integral:
$$\int (3-x)^5 \, dx$$

18. Evaluate the indefinite integral:
$$\int 3t^2 \cos(t^3) \, dt$$

19. Evaluate the definite integral:
$$\int_{-1}^{2} (2x^2 - 1) \, dx$$

20. Evaluate the definite integral:
$$\int_{4}^{9} \frac{1}{\sqrt{t}} \, dt$$