

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 between the points $(1, -2)$ and $(4, 6)$ in *point-slope* form.

2. Find the value of:

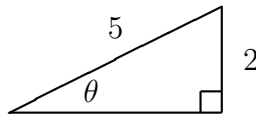
$$\arctan(-\sqrt{3})$$

3. Solve for y :

$$y^2 + 2y - 2 = 0$$

4. Rewrite by completing the square: $x^2 + 3x$

5. Find the value of $\cos(\theta)$:

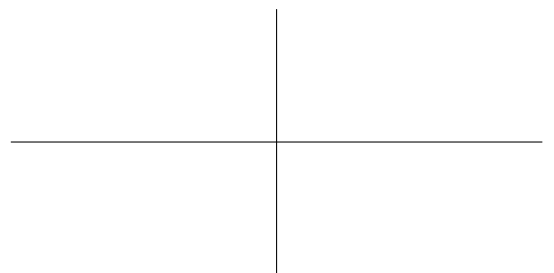


6. Simplify as far as you can:

$$e^{-\ln 5 + 2 \ln 3}$$

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. Simplify:

$$(-32)^{2/5}$$

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

10. If $g(x) = x^{4/5}$, find $g'(x)$.

11. If $y = \cos^3(\theta)$, find $dy/d\theta$.

12. If $f(x) = 3 \sin(x + 1)$, find $f'(x)$.

13. Find the derivative of

$$h(s) = s^2 e^s$$

14. Find the derivative of

$$f(x) = \frac{x^2}{\ln(x)}$$

15. Find the derivative of

$$g(x) = \frac{\cos(x)}{x^2}$$

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

$$f'(t) = 3 - 2\sqrt{t}$$

17. Evaluate the indefinite integral:

$$\int (3 - 2x)^{10} dx$$

18. Evaluate the indefinite integral:

$$\int \frac{x^2}{x^3 + 5} dx$$

19. Evaluate the definite integral:

$$\int_{-1}^2 (3x - x^2) dx$$

20. Evaluate the definite integral:

$$\int_4^9 \frac{1}{\sqrt{t}} dt$$