Calculus ABC Test I—Version 6811 **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. Simplify by combining using a common denominator:

$$1 + \frac{1}{x}$$

2. Simplify as far as you can:

$$\frac{x^2 - 4}{x + 2}$$

3. Solve for x:

$$\sqrt{x} + 1 = \sqrt{x + 9}$$

4. Solve for x:

$$x^2 + 6x + 8 = 0$$

5. Solve for x:

$$4 \leq 3x - 2 < 13$$

6. Find the equation of the line through the point (2,3) with slope 1 in *slope-intercept* form.

7. Find all roots of: $5x^2 - 17x - 12 = 0$

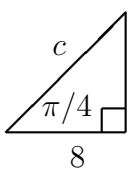
8. Find the value of:

$$\sin\left(\frac{5\pi}{4}\right)$$

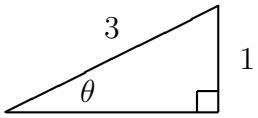
9. Find the value of:

$$\sin(0)$$

10. Find the value of c:



11. Find the value of $\sin(\theta)$:



12. Graph the function $y = \cos(x)$ for $-\pi \leq x \leq \pi$.
Label with the following values (if applicable): each intercept, location of each asymptote, and (x, y) coordinates of each min and max.

13. Simplify:

$$\frac{(6y^3)^4}{2y^5}$$

14. Simplify and eliminate any negative exponents:

$$\left(\frac{z^{-3}}{z^{-1}}\right)^{1/2}$$

15. Solve for t (write answer as a rational number):

$$9^{t+2} = 3$$

16. Solve for z:

$$7^{z+2} = 3$$

17. Graph the function $y = x - 3$.
Label with the following values (if applicable): each intercept, slope, and (x, y) coordinates of vertex.

18. Graph the function $y = x^2$.
Label with the following values (if applicable): each intercept, slope, and (x, y) coordinates of vertex.

19. Find the area of a rectangle which has length 9 meters and width 3 meters.

20. Find the volume of a right circular cylinder (a can) with radius 7 cm and height 2 cm.