

Student: _____**Instructor:** Kaddour Boukaabar**Assignment:** Review For Math**Date:** _____**Program:** CMAP4 Parts A_B_C_D

Assessment & Placement: Part D

1. Write as an exponential equation.

$$\log_{10} 100,000 = 5$$

- A. $10^5 = 100,000$
- B. $5^{10} = 100,000$
- C. $10^{-5} = 100,000$
- D. $100,000^{-5} = 10$

ID: MC 18.4-6

2. A point on the terminal side of angle θ is given. Find the exact value of the indicated trigonometric function of θ .

(18,24) Find $\sin \theta$.

- A. $\frac{3}{4}$
- B. $\frac{4}{5}$
- C. $\frac{4}{3}$
- D. $\frac{3}{5}$

ID: MC 21.3-1

3. Find the value of the logarithmic expression.

$$\log_{10} 100$$

- A. -2
- B. $\frac{1}{100}$
- C. 2
- D. 20

ID: MC 18.4-16

4. Use the power property to rewrite the expression.

$$\log_7 x^2$$

- A. $2 \log_7 x^2$
- B. $7 \log x$
- C. $2 \log_7 x$
- D. $7 \log_2 x$

ID: MC 18.5-9

5. Convert the angle in radians to degrees.

$$-\frac{\pi}{2}$$

- A. $-\left(\frac{\pi}{2}\right)^\circ$
- B. -2°
- C. $-90\pi^\circ$
- D. -90°

ID: MC 21.1-20

6. Find all values that make the expression undefined.

$$\frac{8}{m+3}$$

- A. 0
- B. -3
- C. Never undefined
- D. 3

ID: MC 14.1-1

7. Express as the logarithm of a single expression. Assume that variables represent positive numbers.

$$\log_b x + \log_b y$$

- A. $\log_{2b} xy$
- B. $\log_b(x+y)$
- C. $\log_b xy$
- D. $\log_{2b}(x+y)$

ID: MC 18.5-2

8. Write as a logarithmic equation.

$$10^3 = 1,000$$

- A. $\log_3 1,000 = 10$
- B. $\log_{10} 3 = 1,000$
- C. $\log_{10} 1,000 = 3$
- D. $\log_3 10 = 1,000$

ID: MC 18.4-5

9. Find a positive angle less than 360° that is coterminal with the given angle.

$$394^\circ$$

- A. 34°
- B. 24°
- C. 197°
- D. 214°

ID: MC 21.1-32

10. Express as the logarithm of a single expression. Assume that variables represent positive numbers.

$$\log_b x - \log_b y$$

- A. $\log_b \frac{x}{y}$
- B. $\log_b x - y$
- C. $\log_{2b} \frac{x}{y}$
- D. $\log_b \frac{y}{x}$

ID: MC 18.5-7

11. Solve the equation.

$$\log_5 9 + \log_5 x = 1$$

- A. $\frac{1}{9}$
- B. $\frac{5}{9}$
- C. $\sqrt[9]{5}$
- D. $\frac{9}{5}$

ID: MC 18.7-9

12. Use an identity to find the value of the expression. Do not use a calculator.

$$\sin^2 40^\circ + \cos^2 40^\circ$$

- A. 0.16
- B. 0.4
- C. 1
- D. 0

ID: MC 21.2-10

13. Convert the angle in radians to degrees.

$$\frac{\pi}{6}$$

- A. 1°
- B. $\left(\frac{\pi}{6}\right)^\circ$
- C. 30°
- D. $30\pi^\circ$

ID: MC 21.1-19

14. Find the value of the logarithmic expression.

$$\log_2 8$$

- A. 3
 B. $\frac{1}{3}$
 C. 6
 D. 1

ID: MC 18.4-10

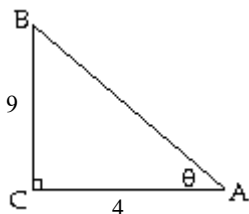
15. Express as the logarithm of a single expression. Assume that variables represent positive numbers.

$$6 \log_b q - \log_b r$$

- A. $\log_b (q^6 - r)$
 B. $\log_b \frac{6q}{r}$
 C. $\log_b q^6 \div \log_b r$
 D. $\log_b \frac{q^6}{r}$

ID: MC 18.5-20

16. Two sides of a right triangle ABC (C is the right angle) are given. Find the indicated trigonometric function of the given angle. Give an exact answer with a rational denominator.



Find $\sin \theta$.

- A. $\sin \theta = \frac{4\sqrt{97}}{97}$
 B. $\sin \theta = \frac{\sqrt{97}}{4}$
 C. $\sin \theta = \frac{\sqrt{97}}{9}$
 D. $\sin \theta = \frac{9\sqrt{97}}{97}$

ID: MC 21.2-1

17. Write the expression as sums or differences of multiples of logarithms.

$$\log_y \frac{11x}{5}$$

- A. $\log_y 11x - \log_y 5$
- B. $\log_y 6x$
- C. $\log_y 11 + \log_y x + \log_y 5$
- D. $\log_y 11 + \log_y x - \log_y 5$

ID: MC 18.5-14

18. A point on the terminal side of angle θ is given. Find the exact value of the indicated trigonometric function of θ .

(3,4) Find $\cos \theta$.

- A. $\frac{4}{5}$
- B. $\frac{3}{4}$
- C. $\frac{3}{5}$
- D. $\frac{4}{3}$

ID: MC 21.3-2

19. Convert the angle in degrees to radians. Express answer as a multiple of π .

60°

- A. $\frac{\pi}{2}$ radians
- B. $\frac{\pi}{4}$ radians
- C. $\frac{\pi}{3}$ radians
- D. $\frac{\pi}{5}$ radians

ID: MC 21.1-15

20. θ is an acute angle and $\sin \theta = \frac{2\sqrt{2}}{3}$. Use the Pythagorean identity $\sin^2 \theta + \cos^2 \theta = 1$ to find $\cos \theta$.

- A. $\frac{3\sqrt{2}}{4}$
- B. 3
- C. $\frac{1}{3}$
- D. $2\sqrt{2}$

ID: MC 21.2-9

21. Determine the amplitude or period as requested.

Period of $y = \sin 3x$

- A. 2π
- B. 3
- C. $\frac{2\pi}{3}$
- D. 1

ID: MC 21.4-6

22. Find the reference angle for the given angle.

430°

- A. 110°
- B. 20°
- C. 160°
- D. 70°

ID: MC 21.3-21

23. Complete the identity.

$\cot x \cdot \tan x = ?$

- A. 0
- B. 1
- C. -1
- D. $\sin x$

ID: MC 21.6-11

24. Use reference angles to find the exact value of the expression. Do not use a calculator.

$$\tan \frac{-3\pi}{4}$$

-
- A. $\frac{\sqrt{3}}{3}$
- B. $\sqrt{3}$
- C. -1
- D. 1

ID: MC 21.3-25

25. A point on the terminal side of angle θ is given. Find the exact value of the indicated trigonometric function of θ .

$(-6, -7)$ Find $\tan \theta$.

-
- A. $-\frac{7}{9}$
- B. $\frac{7}{6}$
- C. $\frac{6}{7}$
- D. $-\frac{2}{3}$

ID: MC 21.3-5

26. Find the value of the logarithmic expression.

$$\log_3 \frac{1}{27}$$

-
- A. 3
- B. $\frac{1}{3}$
- C. $-\frac{1}{9}$
- D. -3

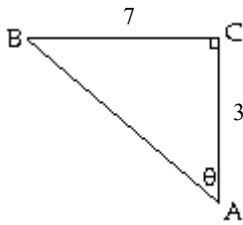
ID: MC 18.4-19

27. Given $f(x) = x^2 - 4x + 1$, find $f(-1)$.

- A. 4
 B. -4
 C. -2
 D. 6

ID: MC 17.5-17

28. Two sides of a right triangle ABC (C is the right angle) are given. Find the indicated trigonometric function of the given angle. Give an exact answer with a rational denominator.



Find $\tan \theta$.

ID: MC 21.2-5

- A. $\tan \theta = \frac{7}{3}$
 B. $\tan \theta = \frac{\sqrt{58}}{7}$
 C. $\tan \theta = \frac{\sqrt{58}}{3}$
 D. $\tan \theta = \frac{3}{7}$

29. Solve the equation. Give an exact solution.

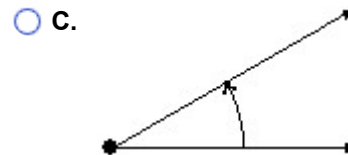
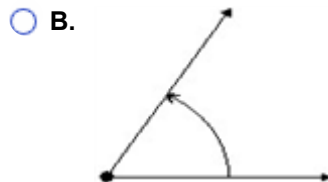
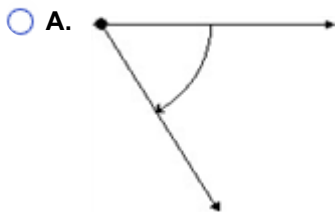
$$e^{3x} = 6$$

- A. $3 \ln 6$
 B. $\frac{\ln 6}{3}$
 C. $\frac{\ln 3}{6}$
 D. $2e$

ID: MC 18.7-3

30. Draw the angle in standard position.

60°



ID: MC 21.1-29

31. Given the values of f and g , find the function value.

$$f(2) = 4; \quad g(-11) = 2 \quad \text{Find } (f \circ g)(-11).$$

- A. 7
- B. -4
- C. 4
- D. 11

ID: MC 18.1-20

32. Solve the equation.

$$4^x = 256$$

- A. 3
- B. 5
- C. 4
- D. 64

ID: MC 18.3-12

33. For the given functions f and g , find the composition.

$$f(x) = x^2 + 3x; \quad g(x) = x + 3 \quad \text{Find } (f \circ g)(3).$$

- A. 21
- B. 0
- C. $3\sqrt{3}$
- D. 54

ID: MC 18.1-15

34. Express as the logarithm of a single expression. Assume that variables represent positive numbers.

$$\log_3 6 + \log_3 x$$

- A. $\log_3 6x$
- B. $\log_{18} x$
- C. $\log_3 6^x$
- D. $\log_3(x+6)$

ID: MC 18.5-3

1. A. $10^5 = 100,000$

2. B. $\frac{4}{5}$

3. C. 2

4. C. $2 \log_7 x$

5. D. -90°

6. B. -3

7. C. $\log_b xy$

8. C. $\log_{10} 1,000 = 3$

9. A. 34°

10. A. $\log_b \frac{x}{y}$

11. B. $\frac{5}{9}$

12. C. 1

13. C. 30°

14. A. 3

15. D. $\log_b \frac{q^6}{r}$

16. D. $\sin \theta = \frac{9\sqrt{97}}{97}$

17. D. $\log_y 11 + \log_y x - \log_y 5$

18. C. $\frac{3}{5}$

19. C. $\frac{\pi}{3}$ radians

20. C. $\frac{1}{3}$

21. C. $\frac{2\pi}{3}$

22. D. 70°

23. B. 1

24. D. 1

25. B. $\frac{7}{6}$

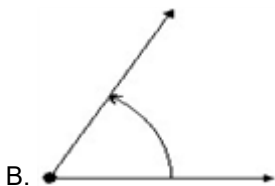
26. D. -3

27. D. 6

28. A. $\tan \theta = \frac{7}{3}$

29. B. $\frac{\ln 6}{3}$

30.



31. C. 4

32. C. 4

33. D. 54

34. A. $\log_3 6x$
