

ALGEBRA/TRIGONOMETRY QUIZ (MEMORY JOGGER)

1. Divide u^3 by $u + 1$.

2. Evaluate $8^{2/3}$.

In problems 3–5, “complete the square” and write as a sum or difference of two squares.

3. $x^2 - x + 1$

4. $x^2 + 3x$

5. $x^2 - 7$

6. Combine and simplify: $1 + \frac{1}{1 + \frac{1}{1 - x}}$

7. Simplify $a^{[3 \log_a b + 2 \log_a c]}$ to a form *without* any logs, i.e., just variables raised to a power.

8. Find the roots of $x^2 - 3x - 10 = 0$.

9. Find the roots of $3x^2 + 5x = 0$.

10. Solve (for x) $\frac{x}{x-2} + \frac{x-1}{2} = x + 1$.

11. Solve for x and y .

$$\begin{aligned} 2x + y &= 6 \\ 4x + 2y &= 8 \end{aligned}$$

12. Solve for x , y and z .

$$\begin{aligned} 3x + 4y - z &= -2 \\ 2x - 3y + z &= 4 \\ x - 6y + 2z &= 5 \end{aligned}$$

13. Given $\sin \theta = x$, what is $\cos \theta$?

14. Given $\sin \alpha = 4/5$, what is $\sin 2\alpha$?

15. True or False? $1 + \sin 2x = (\sin x + \cos x)^2$.

16. Simplify: $\sin^4 x + 2 \sin^2 x \cos^2 x + \cos^4 x + 2$.

In problems 17 and 18, re-write in terms of $\sin x$, $\cos x$ only.

17.

$$\frac{\csc x \tan^2 x}{\sec x}$$

18.

$$\frac{\sin x \cot x}{\sec x}$$

19. Calculate the area of a circle, given that the circumference equals 10π .

20. Calculate the area of a right triangle, with one side equaling 3 and the hypotenuse equaling 5.