

REVIEW FOR THE COLLEGE ALGEBRA PLACEMENT TEST

1. Evaluate $-x^2 - 3x + 9$ for $x = 1$
2. Multiply and simplify: $\sqrt{3}(\sqrt{3} + 7) - (\sqrt{3} - 1)$
3. Simplify and factor: $5x - 2(y - x) - x$
4. Simplify: $\frac{\left(\frac{3}{4}\right)}{3}$
5. Simplify and write as a single fraction: $\frac{1 + \frac{3}{4}}{2 - \frac{1}{6}}$
6. Simplify as much as possible: $\sqrt{72x^8y^4}$
7. Simplify by rationalizing the denominator: $\frac{4}{\sqrt{6}}$
8. Multiply: $(8x^3y)(-3x^3y^7)$
9. Find the slope of the line: $2x - 3y - 10 = 0$
10. Write as a single fraction in terms of $\sqrt{2}$: $\sqrt{18} + \frac{1}{\sqrt{2}}$
11. Solve for all values of x : $\frac{1}{x-3} - 3 = \frac{x}{x-3}$
12. Solve for all values of x : $|x| = 5$
13. Multiply and simplify: $\left(\frac{x^2 - 3x}{3x}\right)\left(\frac{1}{9 - x^2}\right)$
14. Find the solution set for x : $2x + 1 > 3x + 7$
15. Solve for x : $2x^2 + 3x - 2 = 0$
16. Solve for x : $2x^2 - 3x - 4 = 0$

17. Solve for x : $2x^2 - 6x + 5 = 0$

18. Evaluate: $\left(\frac{2}{3}\right)^{-2}$

19. Solve for x and y :
$$\begin{cases} 5x - 3y = 21 \\ x + 5y = -7 \end{cases}$$

20. Find the solution set for x : $|x - 2| < 5$

21. Write $\frac{3}{x} - \frac{4}{y}$ as a single fraction.

22. Factor completely: $x^4 - 81$.

23. Add and simplify: $\frac{x}{8y} + \frac{x}{3y}$.

24. The graphs of the system of equation consists of lines that
a) intersect b) meet in one point c) are parallel

$$\begin{cases} 3x - 4y = 7 \\ 9x - 12y = 2 \end{cases}$$

25. Simplify: $8^{\frac{2}{3}}(4)^{-\frac{1}{2}}$

26. Find the solution set for x : $x^2 + 6 > 5x$

27. If $f(x) = x^3 + 1$, find $f(3)$

28. Graph: $y = 1$

29. Graph: $x = -3$

30. Graph: $2x + 3y = 2$