

Pure Mathematics 1. Pre test.

1. Simplify: $8 - [2(4 - 6) - 7(5 - 1)]$
2. Solve for x : $\frac{3}{4}x = 7$
3. Simplify: $-2x - (-x + y) + (x - 3y)$
4. Simplify: $\sqrt{18x^{10}y^6}$
5. Simplify: $\frac{3}{3 + \frac{1}{3}}$
6. Simplify: $(-4x^3y^4)(2x^2y)$
7. Find the y -intercept of the line $\frac{x}{3} + y = 2$.
8. Simplify: $3^0 3^3 2^2$
9. Simplify: $\frac{16x^3y + 8x^2y^3}{4x^2y}$
10. Rationalize the denominator: $\frac{8}{\sqrt{2}}$
11. Graph the line: $-2x = 1 + y$
12. Solve for x : $\frac{2}{x+1} + 3 = \frac{x}{x+1}$
13. Solve for x : $Ax + By + C = 0$
14. Simplify: $\frac{(x-2)(x^2 - 2x - 3)}{(x-3)(x^2 + 3x + 2)}$
15. Simplify: $\frac{a^2b}{a^2b + a}$
16. Solve the inequality: $-2x + 4 < 10x - 4$
17. Solve for x : $x^2 + x - 1 = 0$
18. Simplify: $\frac{3}{x} + \frac{2}{y} - \frac{1}{y}$
19. Simplify: $\frac{x}{3y} - \frac{x}{2y}$
20. Simplify: $(9)^{\frac{3}{2}}(8)^{\frac{1}{3}}$
21. If $f(x) = 3x^2 + x - 1$, find $f(3)$.
22. If $f(x) = x + x^2$, find $f(x - 1)$.
23. Simplify: $\frac{\frac{a}{b} + \frac{a}{c}}{\frac{1}{b} + \frac{a}{c}}$
24. Solve for x : $6x^2 + 7x = 3$
25. Solve for x : $2x - \frac{1}{10} = 0.3$
26. Factor: $(2 - y)x - (2 - y)$
27. The following equation relates Celsius degrees to Fahrenheit: $F = \frac{9}{5}C + 32$. If $F = 24^\circ$ then $C = ?$
28. Solve the inequality: $(x + 1)(2x - 5) > 0$
29. If $x = 4$ then $x^{-2} = ?$
30. Solve the inequality: $|x - 4| < 5$
31. Find the equation of the line that has a slope of $-\frac{3}{4}$ and passes through the point $(1, -2)$.
32. Solve for x : $x^2 + 12x = 3$
33. Find an equation of the line that passes through $(1, 5)$ and $(4, -3)$.
34. Find the distance between $(2, 4)$ and $(5, -1)$.