

MAT102 PRACTICE PROBLEMS FOR FINAL

1. Find the distance between (5,4) and (-1, 3)
2. If $f(x) = -x - 3x + 15$, find $f(-3)$
3. Multiply and simplify: $3 \cdot \sqrt[3]{24} \cdot 5 \cdot \sqrt[3]{11}$
4. Find the equation of the line through (1,-1) and parallel to the line $y = 2x - 5$
5. Find the equation of the line through (2,5) and perpendicular to the line $2x + y = -3$
6. Find the slope of the line through (-6, 1) and (2, 3)
7. Solve: $|2x + 5| = 13$
8. Solve: $|5p + 7| = |4p + 3|$
9. Solve: $|2 - 9x| \geq 17$
10. Solve: $|9y - 1| \geq -4$
11. Solve: $\left| \frac{1 + 3x}{5} \right| > \frac{7}{8}$
12. Solve: $|13x - 7| = -19$
13. Solve: $|2x - 1| \leq 3$
14. Solve: $|-4x + 9| \leq 14$
15. Solve: $|7x + 5| \leq 30$
16. Solve: $|3x - 5| \leq -13$
17. Solve: $x^2 + 6 > 5x$
18. Solve for X: $C = AX + BX$

19. Solve for f : $\frac{1}{p} + \frac{1}{q} = \frac{1}{f}$
20. Write in simplest radical form: $\sqrt[3]{2n} \cdot \sqrt{2n}$
21. Find the union: $5x - 7 \leq 13$ or $2x - 1 \geq -7$
22. Subtract. Simplify, if possible: $\frac{5}{x-7} - \frac{3}{x}$
23. How many liters of a 25% acid solution should be added to a 50% acid solution to get 10 liters of a solution that is 40% acid?
24. Solve: $x^4 - 13x^2 + 36 = 0$
25. Factor: $125x^3 + 64y^3$
26. Factor: $p^6 - q^6$
27. Solve the system: $\begin{cases} 9x - 2y = 3 \\ y = 3x - 6 \end{cases}$
28. Solve the system: $\begin{cases} 3x + 2y = 3 \\ 9x - 8y = -2 \end{cases}$
29. Divide and simplify: $\frac{6x-6}{2x^2+x-1} \div \frac{x^2-2x+1}{x^2-1}$
30. Simplify: $3\sqrt{45} + 6\sqrt{20} - 2\sqrt{125}$
31. Write in simplest radical form: $x^{\frac{1}{3}} \cdot y^{\frac{1}{4}}$
32. Solve: $\frac{3x-5}{x^2+4x+3} + \frac{2x+2}{x+3} = \frac{x-3}{x+1}$
33. Solve: $\frac{x-2}{x-3} = \frac{x-1}{x+1}$
34. Factor: $8x^3 - 1$