

Polynomials and Radicals

Complete the following problems on a separate sheet of paper. Demonstrate your understanding of the processes involved by showing all work

Simplify

1. $(5a + 4b)(2a - 3b)$
2. $(2x + 5)^2$
3. $\sqrt{180}$
4. $\sqrt{3y^4z} \sqrt{20z}$
5. $6\sqrt{20} - 4\sqrt{45} + \sqrt{80}$
6. $(3\sqrt{5} + \sqrt{2})(3\sqrt{5} - \sqrt{2})$
7. $\sqrt{4x^2(x^2 + 4)}$

Factor completely

8. $32x^4 - 40xy^2$
9. $2x^2 + 5x - 3$
10. $4x^3 - 4x^2 - 9x + 9$

Solve

11. $8 - 3x = -7 + 2x$
12. $6(2x - 1) = 3 - (x + 10)$
13. $y^2 + 16y + 64 = 0$
14. $x^2 - x = 20$
15. $2x^2 + 11x - 6 = 0$