

Intro to Algebra 2

Show your work.

1. List all of the sets of numbers to which each belongs.

a) -5

c) $\sqrt[3]{\frac{27}{8}}$

b) $\frac{2}{5}$

d) $\sqrt{50}$

Solve each. Write the inequality in interval notation.

2. $4(-3x + 1) = -14x - (x + 4) - (2x - 6)$

3. $-\frac{2}{3}x = \frac{1}{12}x + \frac{1}{2}(x + 4)$

4. $-\frac{1}{2}|2x - 3| + 5 = 1$

5. $2|x + 7| + 5 < 7$

Simplify.

6. $3x(2x - 5)(x + 1)$

7. $-2x^2(3x - 7)^2$

8. $(2x + 3)(4x^2 - 6x + 9)$

Factor completely.

9. $x^2 - 10x - 24$

10. $2x^2 - 32$

11. $5x^2 - 54x - 11$

12. $x^2 + 5xy + 6y^2$

13. $8x^3 - 1$

14. $7x^3 - 14x^2 + 5x - 10$

15. $-20 + 25x^2 - 5x^4$

16. $81x^3 + 162x^2 - 25x - 50$

Write each in simplest form.

17. $(2x)(-3x^5)(4x^{-6})$

18. $\left(\frac{-2x^3}{3y^{-5}}\right)^{-3}$

19. $\frac{(3x)^{-2}(-2x^4y^{-3})^3}{(9x^{-3}y^5)^{-1}}$

20. $\left(\frac{5x^2y^{-3}}{x^{-4}y^{-5}}\right)^{-2} \cdot (-2x^{-5}y^3)^{-4}$