

Simplify all answers and show your work!

1. Super J-mart will sell 5 large jars and 2 small jars of their jelly for \$19. They will also sell 2 large jars and 5 small jars for \$16. What is the price of each jar?

Factor the following completely:

2. $3x^3 + 3x^2$

3. $3mx + my + 6nx + 2ny$

4. $x^3 + 8$

5. $7x^2 - 8x + 1$

6. $10y^2 + 27y + 5$

7. $x^2 + 15x + 56$

8. $6x^2 + 5xy - y^2$

9. $49x^2 - 4y^2$

10. $3x^3 - 5x^2 + 4x$

11. Simplify: $\frac{a^2 - 11a + 18}{a^2 - 8a + 12}$

12. Simplify: $\frac{x^4}{x^2 - 4} \div \frac{x^3 - 3x^2}{x^2 - 5x + 6}$

13. Simplify: $\frac{\frac{12}{x-3}}{\frac{9}{x^2-9}}$

14. Add. $\frac{4}{x-2} + \frac{x+1}{x^2-4}$

15. Simplify: $\frac{3x+12}{8} \cdot \frac{16x}{9x+36}$