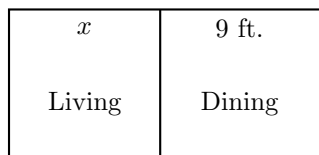


In problems 1 - 12, factor completely. If the polynomial is prime, state this.

1. $m^5n^2 - m^4n^4$
2. $x^2 - 25$
3. $5^3 + 5x^2y - 100xy^2$
4. $u^2 - 2u - 63$
5. $x^3 - 4x^2 - 16x + 64$
6. $x^2 - 10x - 24$
7. $(a + b)(x - 7) + (a + b)(x + 2)$
8. $v^2 - 5v + uv - 5u$
9. $12a^2 - 50b^2$
10. $8a^6 - 32a^4b$
11. $t^2 + 7at + 8t + 56a$
12. $6z^2 + 5z - 6$

13. Find the x -intercepts for the graph of the equation $y = x^2 - 8x - 48$.
14. Solve $a^2 - 10a + 21 = 0$ by factoring and using the principle of zero products.
15. Solve $b(b + 17) = 0$ by using the principle of zero products.
16. Write an equation whose solutions are -3 and 5 .
17. Solve $2k^2 = 9k - 9$ by factoring and using the principle of zero products.
18. A rectangular space of 252 square feet is allocated for the living and dining areas in an apartment. Find the width of the square living area given that the width of the dining area is 9 feet.



19. A water rocket is launched upward with an initial velocity of 80 ft/sec. Its height h , in feet after t seconds is given by $h = 80t - 16t^2$. Determine the height of the rocket 3 seconds after it has been launched.
20. A triangle is 2 cm wider than it is tall. The area is 12 cm^2 . Find the width (length of the base).

