Math 10 Polynomial Factoring Practice

Mastering the skill of factoring is a crucial first step in understanding quadratic functions. In this BC Math 10 course, strive to perfect your factoring abilities, as they will remain a vital tool in your mathematical journey through future grades. Visit hunkim.com/10 for more BC Math 10 resources.

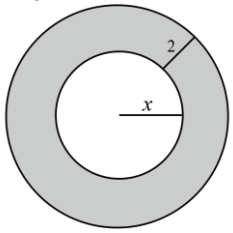
- Greatest common factor of a polynomial
- Simpler cases involving trinomials $y = x^2 + bx + c$ and difference of squares

Factor fully:

1. $15x^5 - 10x^7$
2. $x^2 - 25$
3. $9a^2 - 25$
4. $25a^6 - y^2z^{10}$
5. $a^2 + 9$
6. $5x^2 - 45$
7. $x^2 - 8x + 15$
8. $x^2 - 6x - 72$
9. $3x^2 - 12x + 12$
10. $2x^2 + 7x - 4$
11. Factor $4x^2 - 35x + 24$
12. Factor $30x^2 + 52x - 48$
13. Factor $-9(x + 1) + x^2(x + 1)$
14. Factor $a^2(3x - 1) + 9(1 - 3x)$
15. $5x^3 - 10x^2 + 3x - 6$
16. $112ab - 16a + 128a^2 - 14b$
17. $-4x^4y + 12x^3 + x^2y - 3x$

Challenge:

18. What is the area of the shaded region below in fully factored form?



19. Factor $2(\sin\theta)^2 - 5\sin\theta - 3$
20. Factor $e^{2x} - 25$
    ($e \approx 2.718$ is a special constant)
21. $x^2 + kx + 8$. Find the possible values of k such that this trinomial can be factored.
22. Factor $x^3 + 1$
23. Factor $8a^6 - b^3$
24. $(x + k)(x + y - 1) = x^2 + xy - 2x - y + 1$. Find k
25. Factor $x^2 + xy - y - 1$
26. Factor $x^3 - 3x^2 + 4$
27. Factor $x^n - y^n$
    See if you can find a pattern using wolframalpha.com