

Homework 16 Review	Unit 1 part 2
1. Factor: $125x^3 - 216$ $(5x - 6)(25x^2 + 30x + 36)$	2. Factor: $81v^4 - 900v^2$ $9v^2(3v - 10)(3v + 10)$
3. Factor: $25x^2 + 484$ $(5x - 22i)(5x + 22i)$	4. Factor: $x^2 - 64$ $(x - 8)(x + 8)$
5. Factor: $x^2 - 9x + 14$ $(x - 7)(x - 2)$	6. Factor: $x^2 - 7x + 6$ $(x - 1)(x - 6)$
7. Factor: $x^2 - 12x + 32$ $(x - 8)(x - 4)$	8. Factor: $x^2 + 9x + 20$ $(x + 5)(x + 4)$
9. Factor: $x^2 + 11x + 30$ $(x + 5)(x + 6)$	10. Factor: $x^2 - x - 90$ $(x - 10)(x + 9)$
11. Factor: $x^2 + 7x + 6$ $(x + 1)(x + 6)$	12. Factor: $x^2 - 6x - 40$ $(x - 10)(x + 4)$
13. Factor: $2x^2 + x - 1$ $(x + 1)(2x - 1)$	14. Factor: $20x^2 + 68x - 160$ $4(x - 5)(5x + 8)$



15. Factor:  $28x^3 + 156x^2 + 80x$

$$4x(x+5)(7x+4)$$

16. Factor:  $3x^2 - 7x - 10$

$$(3x-10)(x+3)$$

17. Factor:  $3x^2 - 11x - 42$

$$(x+6)(3x+7)$$

18. Factor:  $10x^2 - 115x + 315$

$$5(x-7)(2x-9)$$

19. Solve by taking square root:  $7v^2 = 42$

$$v = -\sqrt{6} \text{ or } v = +\sqrt{6}$$

20. Solve by taking square root:  $36p^2 = 25$

$$p = -\frac{5}{6} \text{ or } p = \frac{5}{6}$$

21. Solve by completing the square:  $x^2 + 4x - 7 = 0$

$$x^2 + 4x = 7$$

$$(x+2)^2 = 7 + (2)^2$$

$$(x+2)^2 = 11$$

$$x = -2 - \sqrt{11}$$

or

$$x = -2 + \sqrt{11}$$

22. Solve by completing the square:

$$n^2 + 16n + 14 = 0$$

$$n^2 + 16n = -14$$

$$(n+8)^2 = -14 + 8^2$$

$$(n+8)^2 = 50$$

$$n = -8 - 5\sqrt{2}$$

$$\text{or}$$

$$n = -8 + 5\sqrt{2}$$

23. Solve by the quadratic formula:  $-4n^2 = -3$

$$a = -4 \quad b = 0 \quad c = 3$$

$$n = \frac{-0 \pm \sqrt{0^2 - 4(-4)(3)}}{2(-4)}$$

$$-4n^2 + 3 = 0$$

$$n = \frac{-\sqrt{3}}{2} \text{ or } \frac{\sqrt{3}}{2}$$

24. Solve by the quadratic formula:

$$3m^2 - 3m = -4$$

$$m = \frac{3 \pm \sqrt{9 - 48}}{6}$$

$$= \frac{3 \pm i\sqrt{39}}{6}$$

25. Solve by factoring:  $x^2 + 2x - 3 = 0$

$$x = -3 \text{ or } x = 1$$

26. Solve by factoring:

$$8a^2 - 2a = 7a^2 + 42 - a$$

$$x = 7 \text{ or } x = 6$$

27. Solve:  $3x^2 + 2x > 1$

$$(-\infty, -1) \cup \left(\frac{1}{3}, +\infty\right)$$

28. Solve:  $x^2 - 2x - 35 \geq 0$

$$(-\infty, -5] \cup [7, +\infty)$$