

Name:
Instructor:

Date:
Section:

Practice Set 8.4

Use the choices to fill in each blank.

a	c	complex	original
b	u	quadratic	variable

- If an equation can be written in the form $au^2 + bu + c = 0$ for $a \neq 0$, then it can be expressed in _____ form.
- To solve equations using quadratic form, make a substitution that will result in an equation of the form $au^2 + bu + c = 0$, $a \neq 0$, where u is a function of the original _____.
- To solve equations that are quadratic in form, solve the equation $au^2 + bu + c = 0$ for _____.
- Check for extraneous roots by substituting the apparent solutions into the _____ equation.

Solve each equation.

- | | | |
|------------------------------------|--------------------------------------|-----------|
| 5. $x^4 + 9x^2 + 20 = 0$ | 6. $x^4 - 15x^2 + 54 = 0$ | 5. _____ |
| | | 6. _____ |
| 7. $a^4 - 15a^2 + 56 = 0$ | 8. $3x^4 + 25x^2 + 42 = 0$ | 7. _____ |
| | | 8. _____ |
| 9. $x - 2\sqrt{x} - 15 = 0$ | 10. $3x - 5\sqrt{x} = 2$ | 9. _____ |
| | | 10. _____ |
| 11. $(x + 2)^2 - (x + 2) = 42$ | 12. $3(z - 5)^2 + 19(z - 5) + 6 = 0$ | 11. _____ |
| | | 12. _____ |
| 13. $x^{-2} + 6x^{-1} - 16 = 0$ | 14. $3a^{-2} + 20a^{-1} = -12$ | 13. _____ |
| | | 14. _____ |
| 15. $x^{2/3} + 10x^{1/3} + 24 = 0$ | 16. $a^{2/5} + 3a^{1/5} - 28 = 0$ | 15. _____ |
| | | 16. _____ |

Find all x -intercepts of each function.

- | | | |
|-------------------------------------|--------------------------------------|-----------|
| 17. $f(x) = x^4 - 3x^2 + 2$ | 18. $f(x) = x - 17\sqrt{x} + 72$ | 17. _____ |
| | | 18. _____ |
| 19. $g(x) = x^{-2} - 11x^{-1} + 24$ | 20. $h(x) = x^{2/3} - 7x^{1/3} + 12$ | 19. _____ |
| | | 20. _____ |