Instr Soluntions for Harshbarger, Math Apps, 10e.pdf - Foxit Reader

HOME COMMENT VIEW FORM PROTECT SHARE FOXIT CLOUD HELP

Hand Select Text Select Annotation SnapShot Clipboard Actual Size Fit Page Fit Width Fit Visible 66.67% Rotate Left Rotate Right Typewriter Note Highlight Strikeout Underline From File From Scanner Blank From Clipboard PDF Sign Link Bookmark File Attachment Image Annotation Audio & Video

Tools View Comment Create Protect Links Insert

Pages

88 89 90 91 92 93

Chapter 2: Quadratic and Other Special Functions

Exercise 2.1

1. $2x^2+3=x^2-2x+4$
   $x^2+2x-1=0$

2. $x^2-2x+5=2-2x^2$
   $3x^2-2x+3=0$

3. $(y+1)(y+2)=4$
   $y^2+3y+2=4$
   $y^2+3y-2=0$

4. $(z-1)(z-3)=1$
   $z^2-4z+2=0$

5. $x^2-4x=12$
   $x^2-4x-12=0$
   $x^2-6x+2x-12=0$
   $x(x-6)+2(x-6)=0$
   $(x-6)(x+2)=0$
   $x-6=0$ or $x+2=0$
   Solution: $x=-2, 6$

6. $x^2=11x-10$
   $x^2-11x+10=0$
   $x^2-10x-x+10=0$
   $(x-10)(x-1)=0$
   $x-10=0$ or $x-1=0$
   Solution: $x=1, 10$

7. $9-4x^2=0$
   $(3+2x)(3-2x)=0$
   $3+2x=0$ or $3-2x=0$
   Solution: $x=-\frac{3}{2}, \frac{3}{2}$

8. $25x^2-16=0$
   $(5x-4)(5x+4)=0$
   $5x-4=0$ or $5x+4=0$
   Solution: $x=\frac{4}{5}, -\frac{4}{5}$

9. $x=x^2$
   $x^2-x=0$
   $x(x-1)=0$
   Solution: $x=0, 1$
   Never divide by a variable. A root is lost if you divide.

10. $t^2-4t=3t^2$
    $0=2t^2+4t$
    $0=2t(t+2)$
    $2t=0$ or $t+2=0$
    Solution: $t=0, -2$

11. $4t^2-4t+1=0$
    $(2t-1)(2t-1)=0$
    $2t-1=0$
    Solution: $t=\frac{1}{2}$

12. $49z^2+14z+1=0$
    $(7z+1)(7z+1)=0$
    $7z+1=0$
    $7z=-1$
    Solution: $z=-\frac{1}{7}$

13. a. $x^2-4x-4=0$
    $a=1, b=-4, c=-4$
    $$x=\frac{-(-4)\pm\sqrt{(-4)^2-4(1)(-4)}}{2(1)}$$
    $$=\frac{4\pm\sqrt{32}}{2}=\frac{4\pm4\sqrt{2}}{2}=2\pm2\sqrt{2}$$
    b. Since $\sqrt{2}\approx1.414$, the solutions are approximately 4.83, −0.83.
    c. $x^2-6x+7=0$
    $a=1, b=-6, c=7$
    $$x=\frac{6\pm\sqrt{36-28}}{2}$$
    $$=\frac{6\pm\sqrt{8}}{2}=\frac{6\pm2\sqrt{2}}{2}=3\pm\sqrt{2}$$
    $\sqrt{2}\approx1.414$, the solutions are approximately 4.83, −0.83.

©2013 Cengage Learning. All Rights Reserved. May not be scanned, copied or duplicated, or posted to a publicly accessible website, in whole or in part.