

Homework Answers.
P. 218

34) $\left\{-\frac{1}{2}, 3\right\}$

pp. 241-2

4) $\{-1\}$ 12) $\{4\}$ 13) $\{x|x \neq 0, 6\}$ 14) $\{\}$

22) $\{-23/8\}$

$y = (x-5)^2 + 1 \rightarrow$ Form
a.o.s $x=h \rightarrow x=5$
Vertex $(h,k) (5,1)$

$(1, \infty)$ $(5,1)$ D $(5, \infty)$ I
max/min inc/dec
Sketch range

$2x^2 - 5x - \frac{3}{2} = 0$

$x^2 - \frac{5}{2}x - \frac{3}{4} = 0$

$\left(\frac{5}{4}\right) + \left(-\frac{3}{4}\right) = \frac{2}{4} = \frac{1}{2}$ $\left(x - \frac{5}{4}\right)^2 = \frac{3}{2} + \frac{9}{16}$

Oct 6-7:19 PM

Radical Equations

HERMAN[®]
by Jim Unger



"How'd you expect me to do all this homework without a computer?"

Sep 30-1:23 PM

- Always Isolate Radicals
You can only square or cube **sides** of equations, **not terms**...
- Always Check Answers
You may have **extraneous roots** $\rightarrow$ not all answers work...
- Answers must be in the REAL Numbers
You **can't** have a negative under a **square root**...
You **can** have a negative under a **cube root**...

Sep 30-2:39 PM

Solve the following:

1. $(\sqrt{4x+9})^2 = 5^2$
 $4x+9 = 25$
 $-9 -9$
 $\frac{4x}{4} = \frac{16}{4}$
 $x=4$
 ck: $\sqrt{4(4)+9} = 5$
 $\sqrt{16+9} = 5$
 $\sqrt{25} = 5$
 $5=5 \checkmark$

2. $(\sqrt[3]{x^2-1})^3 = 2^3$
 $x^2-1 = 8$
 $+1 +1$
 $\sqrt{x^2-1} = 9$
 $x^2 = 10$
 $x = \pm\sqrt{10}$
 $\sqrt[3]{(\pm\sqrt{10})^2-1} = 2$
 $\sqrt[3]{10-1} = 2$
 $\sqrt[3]{9} = 2$
 $2=2 \checkmark$

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3. $(x+7)^2 = (x-5)^2 \rightarrow (x-5)(x-5)$

$x+7 = x^2-10x+25$
 $-x-7 -x-7$
 $0 = x^2-11x+18$ $\{9\}$
 $0 = (x-9)(x-2)$

$x-9=0$ $x-2=0$
 $x=9$ $x=2$
 $\sqrt{9+7} = \sqrt{16} = 4$ $\sqrt{2+7} = \sqrt{9} = 3$
 $4=4 \checkmark$ $3=3 \checkmark$

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4. $(\sqrt{5x+6})^2 = (3+\sqrt{x+3})^2 \rightarrow (3+\sqrt{x+3})(3+\sqrt{x+3})$

$5x+6 = 12+6\sqrt{x+3}+x$
 $-x-12 -x-12$
 $(4x-6) = (6\sqrt{x+3})^2$
 $(4x-6)(4x-6) = 36(x+3)$
 $16x^2-48x+36 = 36x+108$
 $-36x-108 -36x-108$
 $16x^2-84x-72 = 0$
 $\frac{16x^2}{16} - \frac{84x}{16} - \frac{72}{16} = 0$
 $4x^2-21x-18 = 0$
 $(4x+3)(x-6) = 0$ $(x-6)(4x+3) = 0$
 $4x+3=0$ $x-6=0$
 $\frac{4x}{4} = \frac{-3}{4}$ $x=6$
 $\sqrt{5(6)+6} = 3+\sqrt{6+3}$
 $\sqrt{30+6} = 3+\sqrt{9}$
 $\sqrt{36} = 3+3$
 $6=6 \checkmark$

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5. $\sqrt{2x-5} - \sqrt{x-3} = 1$

$(\sqrt{2x-5})^2 = (1 + \sqrt{x-3})^2$

$2x-5 = 1 + 2\sqrt{x-3} + x-3$

$x-2 = 2\sqrt{x-3}$

$(x-2)^2 = (2\sqrt{x-3})^2$

$x^2 - 4x + 4 = 4(x-3)$

$x^2 - 4x + 4 = 4x - 12$

$x^2 - 8x + 16 = 0$

$(x-4)^2 = 0$

$x = 4$

Check: $\sqrt{2(4)-5} - \sqrt{4-3} = 1$

$\sqrt{3} - \sqrt{1} = 1$

$\sqrt{3} - 1 = 1$

$\sqrt{3} = 2$

$3 = 4$

$x = 4$ is the solution.

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HW: PP. 241 - 242
26, 31, 34, 50, 54, 64, 67

Quiz Tomorrow Function Properties

TEST Tuesday !!!
 GRADED DUE FRIDAY!

Oct 15-12:12 PM

$y = a(x-h)^2 + k$

C.O.S.: $x = h$

$x = -5$

Vertex $(h, k) = (-5, -3)$

Max or min: $x > -5$

range: $[-3, \infty)$

sketch:

min: $(-5, -3)$

dec: $(-\infty, -5)$

inc: $(-5, \infty)$

Oct 11-1:22 PM