

$$\begin{array}{r} 7 \\ 5 \overline{)36} \\ \underline{35} \\ 1 \\ \underline{0} \\ 0 \end{array}$$

Jeopardy

Simplifying Radicals	Imaginary and Complex Numbers	Radical Equations	Graphing Radicals	Domain and Range
Q \$100	Q \$100	Q \$100	Q \$100	Q \$100
Q \$200	Q \$200	Q \$200	Q \$200	Q \$200
Q \$300	Q \$300	Q \$300	Q \$300	Q \$300
Q \$400	Q \$400	Q \$400	Q \$400	Q \$400
Q \$500	Q \$500	Q \$500	Q \$500	Q \$500

Final Jeopardy

Answers:

$$\pm 4$$

C1

\$100 Simplifying Radicals

Simplify: $16^{1/2}$

$$\pm 4$$



C1

\$200 Simplifying Radicals

$$\sqrt[4]{11} \cdot \sqrt[4]{3}$$

$$\sqrt[4]{33}$$




$$\sqrt[4]{33}$$

C1

\$300 Simplifying Radicals

$$\sqrt{12h^4}$$

$4 \sqrt{3}$
 2^2




$$2h^2\sqrt{3}$$

C1

\$400 Simplifying Radicals

$$(7 - \sqrt{2})(8 + \sqrt{2})$$

$56 + 7\sqrt{2} + 8\sqrt{2} + 2$




$$64 - \sqrt{2}$$

C1

\$500 Simplifying Radicals

$$\frac{12}{(5 - \sqrt{3})(5 + \sqrt{3})}$$

$25 - 3$




$6(12\sqrt{3})$	$30 + 6\sqrt{3}$
22	11

C2

\$100 Imaginary and Complex Numbers

$$\sqrt{-144}$$


$$\pm 12i$$


$$\pm 12i$$

C2

\$200 Imaginary and Complex Numbers

$$i^{46}$$


$$i^2 = -1$$


$$i^2 = -1$$

C2

\$300 Imaginary and Complex Numbers

$$(1 + 2i) - (5 + 3i)$$

$$1 + 2i - 5 - 3i$$


$$-4 - i$$

\$400 Imaginary and Complex Numbers

$(6 - 4i)(-1 + 6i)$

$-6 + 36i + 4i + 24$



$18 + 40i$

C1

\$500 Imaginary and Complex Numbers

$\frac{-1 + 3i}{4 - i} (4+i)$

$(4 - i)(4+i)$

$16 + 1$

$-4 - i + 12i + 3$



$\frac{-7 + 11i}{17}$

C2

~~PKK~~

\$100 Radical Equations

The volume of a cylinder is 980 in. The height of the cylinder is 20 in. What is the radius of the cylinder? (Hint: The formula for the volume of a cylinder is $V = \pi r^2 h$.)

$980 = \pi r^2 (20)$



3.95


11
10
13
14

$\sqrt{49} = \frac{\pi r^2}{\pi} \cdot 20$

C3

\$200 Radical Equations
 Solve: $4(x + 4)^3 - 10 = 490$

Handwritten work:
 $4(x+4)^3 - 10 = 490$
 $4(x+4)^3 = 500$
 $(x+4)^3 = 125$
 $x+4 = \sqrt[3]{125}$
 $x+4 = 5$
 $x = 1$




$x = 1$

C3

\$300 Radical Equations
 Solve: $\sqrt{x + 10} - 7 = -5$

Handwritten work:
 $\sqrt{x+10} - 7 = -5$
 $\sqrt{x+10} = 2$
 $x+10 = 4$
 $x = -6$




$x = -6$

C3

\$400 Radical Equations
 Solve: $2\sqrt[3]{(x + 6)^3} + 3 = 19$

Handwritten work:
 $2\sqrt[3]{(x+6)^3} + 3 = 19$
 $2\sqrt[3]{(x+6)^3} = 16$
 $\sqrt[3]{(x+6)^3} = 8$
 $x+6 = 8$
 $x = 2$



$x = 2$

$x + 4 = 3$

$x = -1$

$(-3x - 1)^2 = 12x - 1$

C3
*
C2

\$500 Radical Equations

$\sqrt{3x+2} = (\sqrt{12x-1} + 4)$

$3x+2 = 12x-1 + 8\sqrt{12x-1} + 16$

$-9x-13 = 8\sqrt{12x-1}$

ouch!

No solution

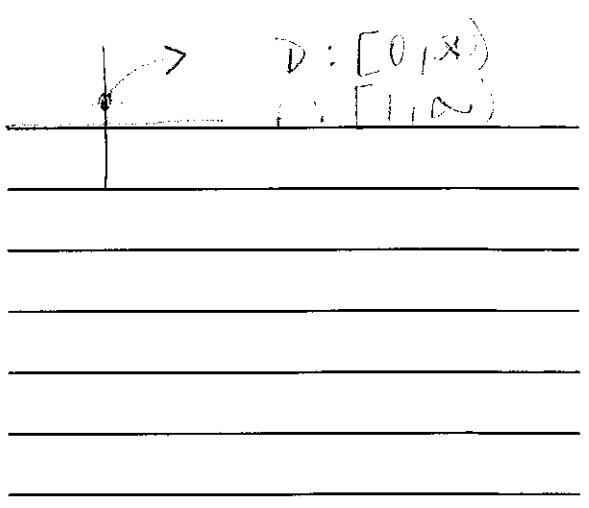
$(\frac{-9x-13}{8})^2 = 12x-1$

C4

\$100 Graphing Radicals

Graph the function and give its domain and range:

$y = \sqrt{x} + 1$

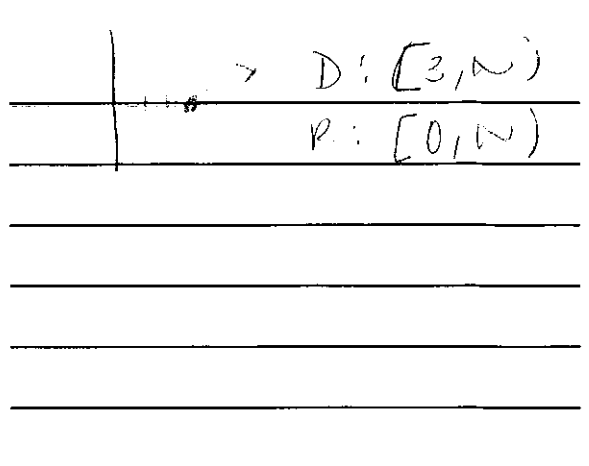


C4

\$200 Graphing Radicals

Graph the function and give its domain and range:

$y = \sqrt{x-3}$

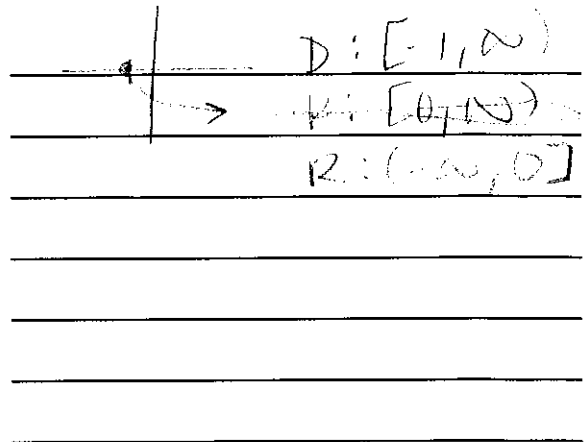


04

\$300 Graphing Radicals

Graph the function and give its domain and range:

$$y = -\sqrt{x+1}$$

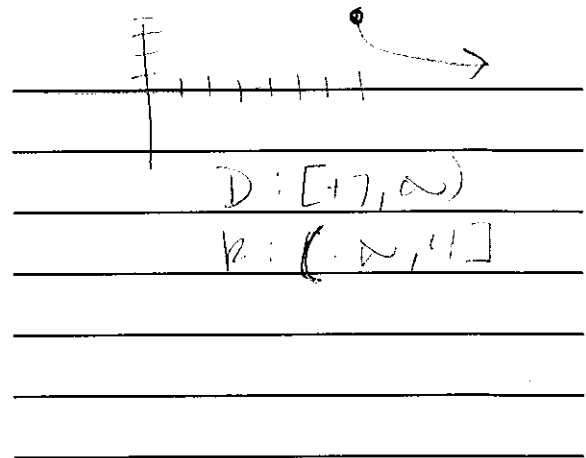


04

\$400 Graphing Radicals

Graph the function and give its domain and range:

$$y = -\sqrt{x-7} + 4$$

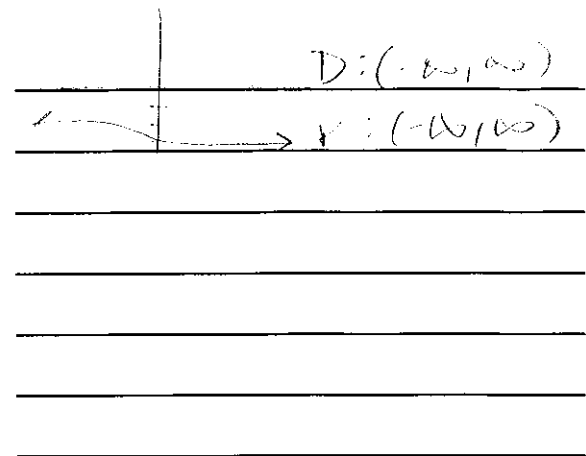


04

\$500 Graphing Radicals

Graph the function and give its domain and range:


$$y = \sqrt[3]{x} - 3$$



CS

\$100 Domain and Range

Give the domain and range:




$D: [-3, 3]$

$R: [1, 4]$

CS

\$200 Domain and Range

Give the domain and range:




$D: (-\infty, \infty)$

$R: [1, \infty)$

CS

\$300 Domain and Range

Give the domain and range:



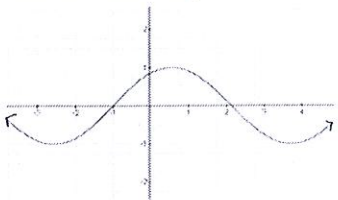

$D:$

$R:$

C5

\$400 Domain and Range

Give the domain and range:

$D: (-\infty, \infty)$

$R: [-1, 1]$


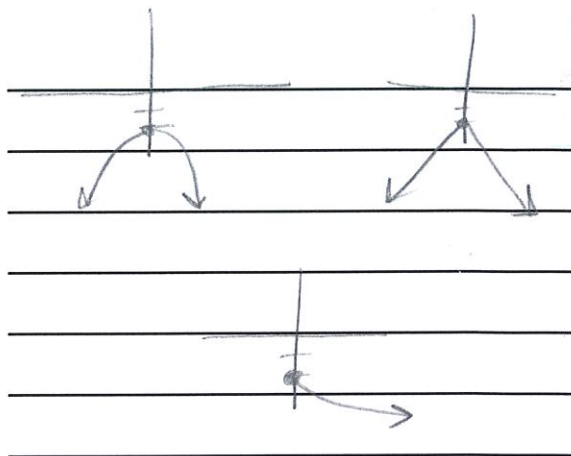
p/x
y1
~~2x~~
~~2x~~
p2x
v2
9

C5

\$500 Domain and Range

Sketch the graph of a function with a range of $\{y \mid y \leq -2\}$

$(-\infty, -2]$





Final Jeopardy


Final Jeopardy

Given the rectangle below, what are its area and perimeter?

$3 + 2\sqrt{7}$



$4 - \sqrt{6}$



perimeter $14 - 2\sqrt{6} + 4\sqrt{7}$

area $= 12 - 3\sqrt{6} + 8\sqrt{7} - 2\sqrt{42}$

$3 + 2\sqrt{7} + 4\sqrt{6} + 3 + 2\sqrt{7} + 4\sqrt{6}$

$(3 + 2\sqrt{7})(4 - \sqrt{6})$
 $12 - 6\sqrt{3} + 8\sqrt{7} - 4\sqrt{21}$
 $12 - 3\sqrt{6} + 8\sqrt{7} - 2\sqrt{42}$