

Unit 1, Lesson 3

I noticed that the solutions don't always have all the questions, for example questions 6 to 8 are not there. I need help solving questions 8.

8.) a) Find the inverse of  $y = \frac{ax+d}{cx-d}$

b) State the range of the inverse

<http://www.comolms.co.uk/146/lesson3/lesson3answers.pdf>  
Screening Date: 11/20/2018, 1:12 PM

domain of  $f(x)$   
 $y = \frac{ax+d}{cx-d}$

$cx-d \neq 0$

$\frac{ax}{c} \neq \frac{d}{c}$

$D: x \neq \frac{d}{c}$

$R: y \neq \frac{d}{c}$

$= f^{-1}(x) = x = f(y)$

$x = \frac{ay+d}{cy-d}$

$x(cy-d) = ay+d$

$cyx - dx = ay + d$

$cyx - ay = d + dx$

$\frac{y(cy-a)}{cx-a} = \frac{d+dx}{cx-a}$

$y = \frac{d+dx}{cx-a}$

Unit 1, Lesson 4

Again the solutions page has failed to provide the solutions. Questions 4 onward are not provided. I need assistance with question 5b) I got the wrong answer and I'm not too sure how to solve it.

5.) Describe how the graph of the second function compares to the graph of the first function.

a)  $y = |x|$

$6y = |x|$

$\rightarrow$  b)  $y = \frac{1}{x}$

$y = \frac{4}{x}$

c)  $y = \sqrt{x}$

$y = \sqrt{\frac{3}{4}x}$

d)  $y = 5x+2$

$y = 5\left(-\frac{1}{6}x\right)+2$

<http://www.comolms.co.uk/146/lesson4/lesson4answers.pdf>  
Screening Date: 11/20/2018, 1:12 PM

b)  $y = \frac{1}{x}$

$\Rightarrow$

$y = \frac{4}{x}$

$y = 4\left(\frac{1}{x}\right)$

\* vertical expansion by a factor of 4

My answer was  $(\sqrt{1000})$ , and the answer was  $10(\sqrt{10})$ , the solutions showed my answer first, which was changed into the final answer.. why does  $(\sqrt{1000})$  become  $10(\sqrt{10})$ ?

Pasted from <[http://b0136w.bk136.mail.live.com/new49be/frame\\_15\\_1\\_3008.1103.htm?pf=pf](http://b0136w.bk136.mail.live.com/new49be/frame_15_1_3008.1103.htm?pf=pf)>

$$\sqrt{1000} = 10\sqrt{10}$$

31.62  
↑  
not exact

$$\sqrt{1000}$$

↑  
 $\sqrt{100} \cdot \sqrt{10}$   
↑  
 $10\sqrt{10}$

$$\sqrt{8} = 2\sqrt{2}$$

↑  
 $\sqrt{4} \cdot \sqrt{2}$   
 $2\sqrt{2}$

$$\frac{\sqrt{32}}{8}$$

↑  
 $\frac{4\sqrt{2}}{8}$   
↓  
 $\frac{\sqrt{2}}{2}$

$$\sqrt{32}$$

↑  
 $\sqrt{16} \cdot \sqrt{2}$   
 $4\sqrt{2}$

The lesson 1 unit 2 worksheet says that  $(\sqrt[5]{32} = 2)$  I dont understand. Would  $\sqrt[5]{25} = 2$  since 5 times itself is 25. just like  $\sqrt[3]{27}$  would = 3 since  $3 \times 3 \times 3$  is 27? How is  $\sqrt[5]{32}$  equal to 2??

Actually,

$$\sqrt[5]{32} = 2$$

b/c  $2^5 = 32$   
not b/c  $5^x = 32$

you mean  $\sqrt{25} = 5$   
b/c  $5^2 = 25$

$$\sqrt[5]{25} \neq 2$$

b/c this saying  
take the 5<sup>th</sup> root  
of 25. It equals  
1.9037

so just as you wrote

$$\sqrt[3]{27} = 3$$

b/c  $3^3 = 27$

More examples

$$\sqrt[3]{125} = 5$$

b/c  $5^3 = 125$

$$\sqrt[4]{16} = 2$$

b/c  $2^4 = 16$

In question 4D  $(1/32)^{a+1}$ , how come the top (1) isnt effected, and only the bottom (32) is, making it  $1/32^{a+1}$ , I thought the power outside the brackets would apply to the whole fraction making it  $(1^{a+1})/(32^{a+1})$

$$\left(\frac{1}{32}\right)^{a+1} = \frac{1}{32^{a+1}}$$

this is b/c 1 to any power  
is always 1 so you don't  
have to write it with 1.

You're right, it does apply to

$$1 (1^{a+1}) \text{ but it} = 1$$

so

$$\left(\frac{1}{32}\right)^{a+1} = \frac{1^{a+1}}{32^{a+1}} = \frac{1}{32^{a+1}}$$

Ex

$$\begin{array}{l} 1^0 = 1 \\ 1^1 = 1 \\ 1^2 = 1 \\ 1^x = 1 \\ x \in \mathbb{R} \end{array} \quad \begin{array}{l} 1^3 = 1 \\ 1^{-1} = 1 \\ 1^{-2} = 1 \\ 1^a = 1 \\ a \in \mathbb{R} \end{array}$$

always equals 1

$$i) 2(5^{2x}) - 52(5^x) + 50 = 0 \quad = 2a^2 - 52a + 50 = 0$$

[http://www.complextutorials.ca/04/02/lesson23.html?\\_lesson=7](http://www.complextutorials.ca/04/02/lesson23.html?_lesson=7) Solve exponential equations A/G.pdf

Screenclipping taken: 1/13/2020, 4:54 PM

↓

	A	B	C
	2	-52	50

A × C = 100 }

$$2(a^2 - 26a + 25) = 0$$

$$2(a - 25)(a - 1) = 0$$

25  
-25   -1   = -26

$$2(5^x - 25)(5^x - 1) = 0$$

$$5^x - 25 = 0$$

$$5^x = 25$$

$$5^x = 5^2$$

$$\boxed{x = 2}$$

$$5^x - 1 = 0$$

$$5^x = 1$$

$$5^x = 5^0 \leftarrow$$

$$\boxed{x = 0}$$

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

$$A=2 \quad B=5 \quad C=-3$$

$$A \times C = 2 \times -3 = -6$$

$$\begin{matrix} -6 & 1 \\ \hline & -5 \end{matrix}$$

$$2x^2 - 6x + x - 3 = 0$$

$$2x(x-3) + 1(x-3) = 0$$

$$(2x+1)(x-3) = 0$$

$$2x+1=0 \quad x-3=0$$

$$\boxed{x = -\frac{1}{2} \quad x = 3}$$

$$6x^2 + 5x - 6 = 0$$

$$A=6 \quad B=5 \quad C=-6$$

$$A \times C = 6 \times -6 = -36$$

$$\begin{matrix} \wedge \\ 9, -4 \end{matrix} = 5$$

$$6x^2 + 9x - 4x - 6 = 0$$

$$3x(2x+3) - 2(2x+3) = 0$$

$$(3x-2)(2x+3) = 0$$

$$3x-2=0 \quad 2x+3=0$$

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

$$\boxed{x^2 + 6x + 9 = 0} \rightarrow (x+3)(x+3) = 0$$

$\wedge$   
3, 3