

Radical Functions (2.1)

p72

day 1

Why do people look better in masks?

Why do we consider some people better looking?

Is beauty objective?

20. Suppose a function $f(x)$ has an inverse function, $f^{-1}(x)$.

day 1

a) Determine $f^{-1}(5)$ if $f(17) = 5$.

$(5, 17)$

$(17, 5)$

15. Given the function $f(x) = 4$ determine each of the following:
a) $f^{-1}(4)$
b) $f^{-1}(-2)$
c) $f^{-1}(8)$
d) $f^{-1}(0)$

11. Jacobson and Gony draw graphs of the function f and f^{-1} on the coordinate plane. Do the lines $y = x$ and $y = -x$ intersect at the origin? Explain why.

12. For each of the following functions, determine the equation of the inverse of the function f .
• graph $f(x)$ and the inverse of $f(x)$
• restrict the domain of $f(x)$ so that the inverse of $f(x)$ is a function
• with the domain of $f(x)$ restricted, sketch the graphs of $f(x)$ and $f^{-1}(x)$
a) $f(x) = x^2 + 3$
b) $f(x) = \frac{1}{2}x^2$
c) $f(x) = -2x^2$
d) $f(x) = (x + 1)^2$
e) $f(x) = -(x - 3)^2$
f) $f(x) = (x - 1)^2 - 2$

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p72

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ex1: The speed of sound changes depending on the temperature of the air according to the function

$$s = 331.1 \sqrt{1 + \frac{T}{273.15}} \quad s \text{ in m/s}$$

T in C

a) find the Domain and Range $s = 20\sqrt{T + 273.15}$

D: $T + 273.15 \geq 0$
 $T \geq -273.15$

R: $s \geq 0$ $[0, \infty)$

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ex1: The speed of sound changes depending on the temperature of the air according to the function

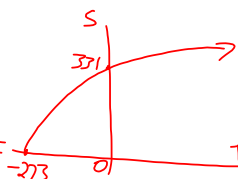
$$s = 20\sqrt{T + 273.15} \quad s \text{ in m/s}$$

T in C

b) find the intercepts and draw a sketch

S int $s = 20\sqrt{0 + 273.15}$
 $T = 0$
 $= 331 \text{ m/s}$

T int $0 = 20\sqrt{T + 273.15}$
 $s = 0$
 $T = -273.15^\circ \text{C}$



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ex1: The speed of sound changes depending on the temperature of the air according to the function

$$s = 20\sqrt{T + 273.15} \quad s \text{ in m/s}$$

T in C

c) Compare the speed of sound right now to when it's -25°C .

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ex2: Sketch a graph and give the mapping.

a) $y = -\sqrt{2x + 3}$

b) $y = 3\sqrt{-(x - 1)}$

V ref
h comp
3 up

$(x, y) \rightarrow (\frac{1}{2}x, -y + 3)$

V str 3
h ref
1 \rightarrow

$(x, y) \rightarrow (-x + 1, 3y)$
3, 4 ac
5 ab

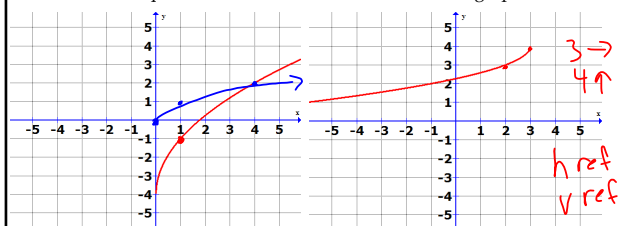
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What are the key points on a radical graph?

ex3: Make the equation of the radical function from the graph.



4 ↓
V str 3

$$Y = 3\sqrt{x} - 4$$

$$Y = -\sqrt{-(x-3)} + 4$$

10a

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#w: p72#5de, 10a, 12

Quiz Monday

Assignment Tuesday