

Math 092
Quiz 1

1) Find the square root of 144. What is the principal square root?

square root = 12, -12 because $(12)^2 = 144$ and $(-12)^2 = 144$

principal square root = 12

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2) Find the specified functional value if it exists. $f(x) = \sqrt{5x-10}$

$f(7) =$

$$f(7) = \sqrt{5(7)-10}$$

$$\begin{aligned} f(7) &= \sqrt{35-10} \\ &= \sqrt{25} \\ &= 5 \end{aligned}$$

Therefore $f(7) = 5$

$f(-2) =$

$$\begin{aligned} f(-2) &= \sqrt{5(-2)-10} \\ &= \sqrt{-10-10} \\ &= \sqrt{-20} \end{aligned}$$

Therefore $f(-2)$ has no real solution.

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3) Simplify. Remember to use absolute value notation. $\sqrt{y^2 + 16y + 64}$

$$\begin{aligned} & \sqrt{y^2 + 16y + 64} \\ &= \sqrt{(y+8)^2} \\ &= |y+8| \end{aligned}$$

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4) Simplify. Assume that no radicands were formed by raising negative quantities to even powers. $\sqrt{(x+3)^{10}}$

$$\begin{aligned} &= \sqrt{(x+3)^{10}} \\ &= \sqrt{((x+3)^5)^2} \end{aligned}$$

$$= |(x+3)^5| \quad \text{or} \quad (x+3)^5 \quad \text{because of}$$

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^
2 5

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