Quiz 8 **Name:** Key

Total Points possible: 11 out of 10

Math 12: Spring 2025

Instructions: Each question is worth 3 points but the last question. **Show all your work in order to receive credit**.

Problem 1. (3 points) Add the radicals.

(a) $6\sqrt{50}-2\sqrt{8}+5\sqrt{12}$

$2 \cdot 25$, $25 = 5 \cdot 5$; $8 = 2 \cdot 4$, $4 = 2 \cdot 2$; $12 = 2 \cdot 6$, $6 = 2 \cdot 3$

$6\sqrt{2\cdot 5^2}-2\sqrt{2\cdot 2\cdot 2}+5\sqrt{2^2\cdot 3}$

$6\cdot 5\sqrt{2}-2\cdot 2\sqrt{2}+5\cdot 2\sqrt{3}$

$30\sqrt{2}-4\sqrt{2}+10\sqrt{3}$

$26\sqrt{2}+10\sqrt{3}$

Problem 2. (1.5 points each) Give the domain of the functions.

(a) $r(x)=\sqrt[12]{2-\frac{1}{7}x}$ ≥ 0

$\left(\sqrt[12]{2-\frac{1}{7}x}\right)^{12} \geq 0^{12}$

$2-\frac{1}{7}x \geq 0$

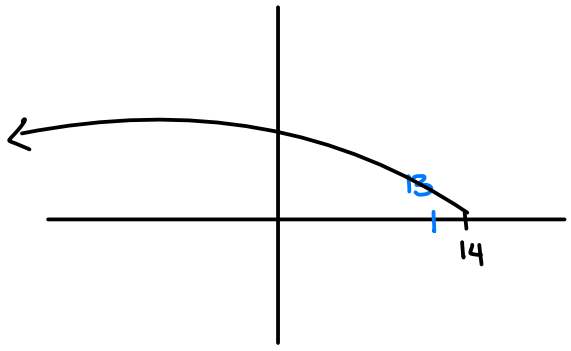
$7\cdot 2 \geq \frac{1}{7}x \cdot 7$

$14 \geq x$

Pick $x = 13$ then

$14 \geq 13$ ✓

So graph is where 13 is at



(b) $f(x)=\sqrt[13]{100-\frac{3}{5}x}$ $(-\infty, \infty)$

$\sqrt{c^2 \cdot c^2} = c \cdot c = c^2$

Problem 3. (3 points) Simplify the radical and solve for c, $\sqrt{c^2+24c+144}+\sqrt{c^4}+7c \doteq 0$

c 12
c 12

$(c+12)(c+12)$

$\sqrt{(c+12)^2} + c^2 + 7c = 0$

$c+12 + c^2 + 7c = 0$

$c^2 + 7c + c + 12 = 0$

$c^2 + 8c + 12 = 0$

c 6
c 2

$(c+2)(c+6) = 0$

$c = -2 \text{ , } c = -6$

Problem 4. (1 points) **Extra credit**. If you were to have one superpower, what would it be and why?

teleportation