



Directions: This is a study tool for the next regents review quiz.

1. The function $f(x) = \frac{x-3}{x^2+2x-8}$ is undefined when x equals

 Answer:

Justify your answer.

2. What is the inverse of the function
 $f(x) = \frac{x+1}{x-2}$

 Answer:

Justify your answer.

3. Write $\sqrt[3]{x} \cdot \sqrt{x}$ as a single term with a rational exponent.

 Answer:

Justify your answer!

4. The expression $\left(\frac{m^2}{m^{\frac{1}{3}}}\right)^{-\frac{1}{2}}$ is equivalent to

(1) $-\sqrt[6]{m^5}$

(3) $-m^5\sqrt{m}$

(2) $\frac{1}{\sqrt[6]{m^5}}$

(4) $\frac{1}{m^5\sqrt{m}}$



Answer:

Justify your answer!

5. Pedro and Bobby each own an ant farm. Pedro starts with 100 ants and says his farm is growing exponentially at a rate of 15% per month. Bobby starts with 350 ants and says his farm is steadily decreasing by 5 ants per month.

Assuming both boys are accurate in describing the population of their ant farms, after how many months, *to the nearest tenth of a month*, will they both have approximately the same number of ants?



Answer:

Explain your answer.

Answers: 1) $\{-4, 2\}$

2) $f^{-1}(x) = \frac{2x+1}{x-1}$

3) $x^{\frac{5}{6}}$ 4) $\frac{1}{\sqrt[6]{x^5}}$

5) 8.1