Math 112 Final Review

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Math 112

Question 2

Solve for x:

$$\frac{2x}{x-3} + 1 = \frac{5}{x-3}$$

Question 3

A company produces a pair of skates for $43.53 and sells each pair for $89.95. If the fixed costs are $742.72, how many pairs must the company produce and sell in order to break even?

Question 6

Solve the following:

$$(x-2)(x+4)=1$$

The largest solution is:

Question 9

Which of the following represents y as a function of x?

1. $x^2 + y^2 = 9$
2. $x^3 + 1 + y^4 = 0$
3. $y = \pm\sqrt{x - 5}$
4. $2x = 5 + y^2$
5. $xy - 4y = 7$

Question 10

Use the function $f(x) = 3 - 5x^2$ to evaluate $\frac{f(h+4)-f(4)}{h}$.

Question 11

Find the domain of the equation $f(x) = \sqrt{2 - 5x}$

Question 12

A concert venue holds a maximum of 1000 people. With ticket prices at \$30, the average attendance is 650 people. It is predicted that with each dollar decrease in price 25 more people will attend. What is the maximum possible revenue for this concert venue?

Question 13

Write an equation that has a domain of all real numbers except $x = -3$ and $x = 5$.

Question 14

Determine the zeros of the equation

$$\frac{x^2 - x}{x^2 + 3x + 2}$$

Question 16

What are the intercepts of the function

$$f(x) = \begin{cases} -x - 1 & x \leq -2 \\ 2x + 3 & -2 < x \leq 0 \\ x^2 + 5x + 4 & x > 0 \end{cases}$$

Question 18

Consider the functions $f(x) = x^2 - 16$ and $h(x) = \sqrt{x + 7}$. Find $(h \circ f)(x)$.

Question 19

Find the inverse of the function

$$f(x) = \frac{x-1}{2x+3}$$

Question 20

Find a formula for the parabola whose vertex is at $(-2, -1)$ and passes through the point $(0, 13)$.