

Math 432 Final Exam Review Packet # 1

Name: _____

1) Factor completely: $x^3 - x^2 - 6x$

2) Perform the indicated operation and express the result in simplest form:

$$\frac{a^2 - 25}{5a^2} \cdot \frac{a^2 - 5a}{a^2 - 10a + 25}$$

3) Express in simplest form: $\frac{3a+1}{a^2-1} - \frac{1}{a+1}$

4) Express in simplest form: $\frac{\frac{1}{ab}}{\frac{1}{a} - \frac{1}{b}}$

5) Solve for x : $\frac{x}{x-2} - \frac{8}{x+3} = \frac{10}{x^2+x-6}$

6) If $f(x) = x^{-2} + x^0$, find the value of $f(2)$.

7) Express in simplest form the value of $2x^0 + x^{\frac{2}{3}}$ if $x = 27$.

8) If $(\sqrt{18} + \sqrt{2})$ is divided by $\sqrt{2}$, the result is

A) $\sqrt{10}$

B) 4

C) 3

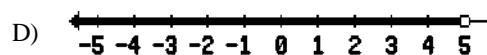
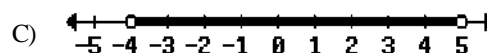
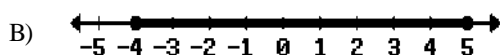
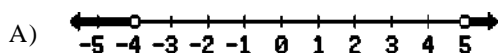
D) 16

9) Express $\frac{2}{3 - \sqrt{2}}$ as an equivalent fraction with a rational denominator.

10) Express $5\sqrt{-18} + 6\sqrt{-98}$ as a monomial in terms of i .

11) Solve for x : $\sqrt{2x+3} = x$

12) Which graph is the solution set of $|2x - 1| < 9$?



13) Solve for all values of x : $|6 - x| = 4$

14) What is the inverse of the function $x + 2y + 3 = 0$?

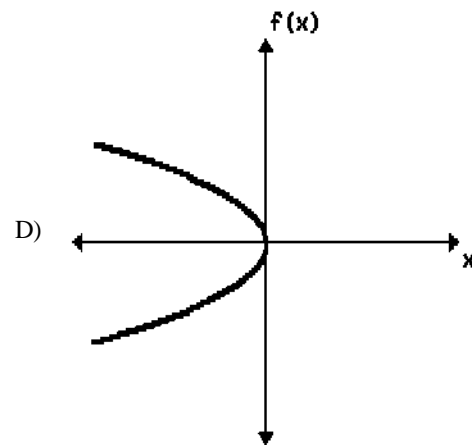
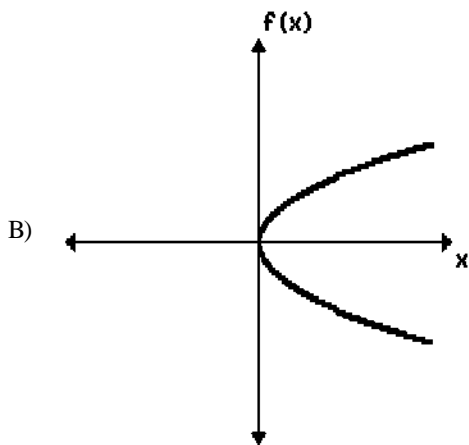
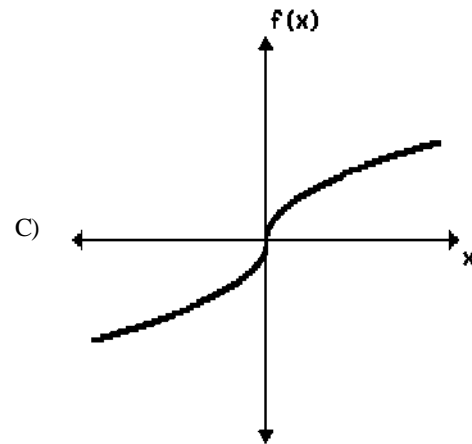
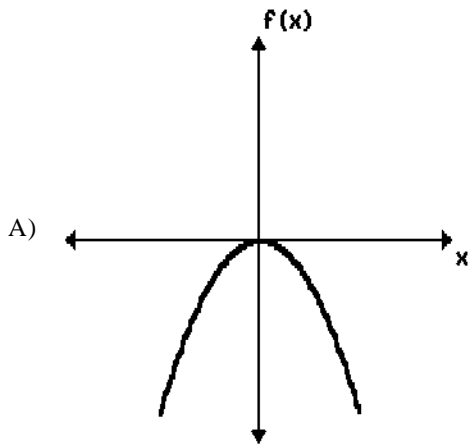
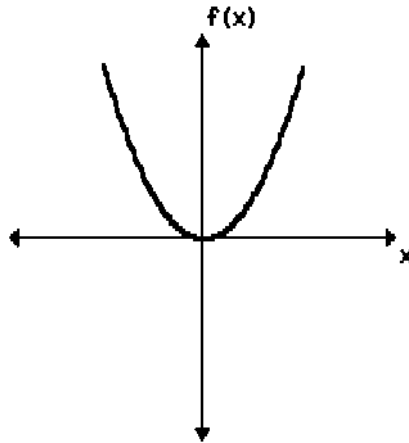
A) $y = -2x - 3$

B) $2x - y + 3 = 0$

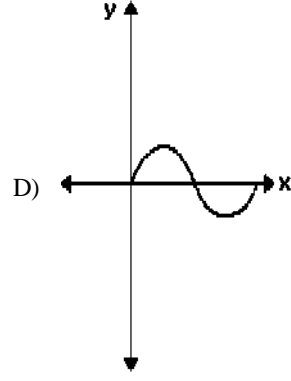
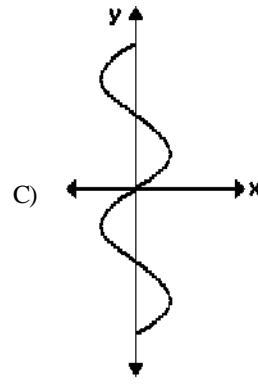
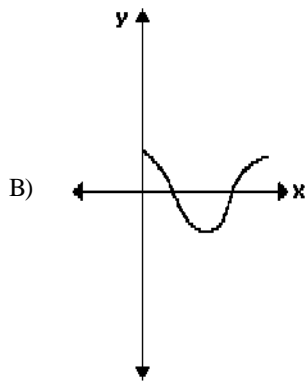
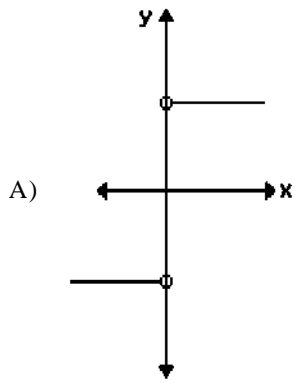
C) $2y + x + 3 = 0$

D) $y = -\frac{1}{2}x - \frac{3}{2}$

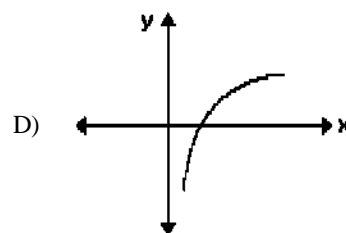
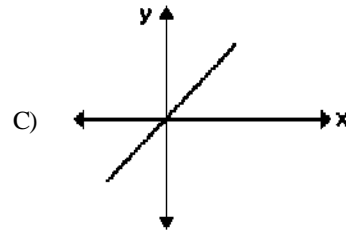
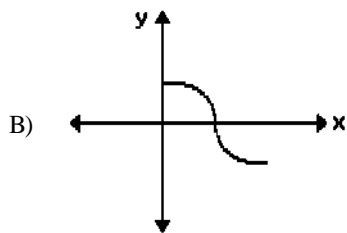
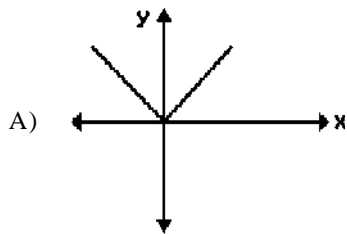
15) In the diagram below, the function $f(x) = x^2$ is represented graphically. Which graph below represents the inverse of $f(x)$?



16) Which diagram shows a relation that is *not* a function?



17) Which function is *not* one to one?



18) The domain for $g(x) = 5x - 1$ is $-2 \leq x \leq 2$. The smallest value in the range of $g(x)$ is

A) 11

B) -11

C) -9

D) 9

19) For which value of x is $f(x) = \frac{x^2 - 2x + 1}{3x - 1}$ undefined?

20) Write the inverse of the given function:

$$\{(5,3), (-2,4), (7,-2)\}$$

- 21) The graph of the equation $y = \left(\frac{1}{2}\right)^x$ lies entirely in
Quadrants
A) III and IV B) I and IV C) I and II D) II and III
- 22) If $x = 5^a$, then the value $5x$ is
A) 6^a B) $a + 5$ C) 5^{a+1} D) $x + 1$
- 23) The probability that Team A will beat Team B in a sporting event is $\frac{2}{3}$. What is the probability that Team B will win all three games of a three-game series?
- 24) If the probability that an event will occur is $\frac{1}{x+1}$, then the probability that the event will *not* occur is
A) $-\frac{x}{x+1}$ B) $x + 1$ C) $-\frac{1}{x+1}$ D) $\frac{x}{x+1}$