

MAC1140 TEST1 REVIEW-A 09-15-2007 3.6-4.2

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Due: 09-21-2007

Full Name:

Sec#:

1.

[3.6.1bPT]Select the polynomial with real coefficients of degree 5 having zeros of 5, $1 - i$, $-2 + i$.

- $(x - 5)(x - 1 + i)(x - 1 - i)(x - 2 - i)(x - 2 + i)$
- $(x - 5)(x - 1 + i)(x - 1 - i)(x + 2 - i)(x + 2 + i)$
- $(x - 5)(x + 1 + i)(x + 1 - i)(x - 2 - i)(x - 2 + i)$
- $(x - 5)(x + 1 + i)(x + 1 - i)(x + 2 - i)(x + 2 + i)$
- None of these

2.

[3.7.1aPT]Choose the domain of the rational function $f(x) = \frac{2x^2}{x^4+1}$
none of these

- $(-\infty, \infty)$
- $(-\infty, 0) \cup (0, \infty)$
- $(-\infty, -1) \cup (-1, 0) \cup (0, 1) \cup (1, \infty)$
- $(-\infty, -1) \cup (-1, 1) \cup (1, \infty)$

3.

[3.7.2aPT]Select the choice having ALL the vertical asymptotes of the function $f(x) = \frac{x^2+x-12}{(x-2)(x+2)}$

- $x = 2, x = -2$
- $y = 2x, y = -2x$
- $(2, 0), (-2, 0)$
- $x = 2, x = -2, x = 0, x = -4, x = 3$

- $y = 2, y = -2$
- No vertical asymptotes

4.

[3.7.2bPT] Select the choice having ALL the horizontal asymptotes of $f(x) = \frac{x}{x^2+2x-3}$

- $y = -3, y = 1$
- $x = 0$
- $y = 0$
- $(0, 0)$
- $y = 0, y = -3, y = 1$
- No horizontal asymptotes

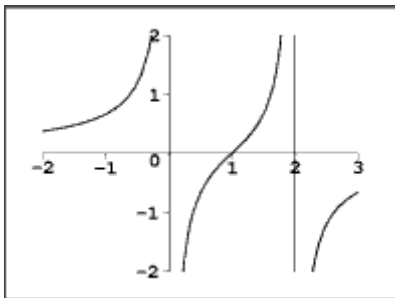
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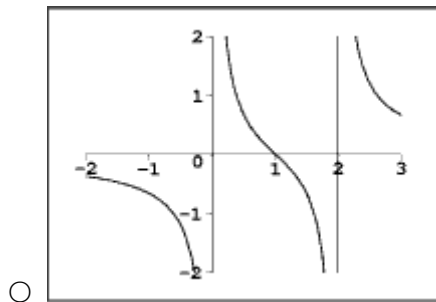
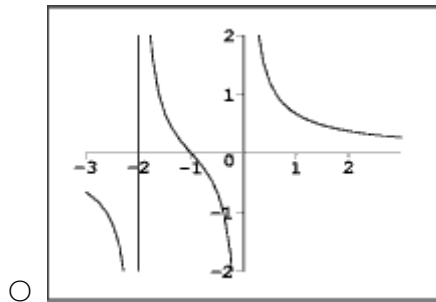
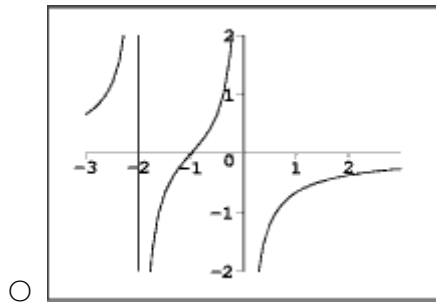
[3.7.3aPT] Find the oblique asymptote of $f(x) = \frac{x^2-7x-6}{x-6}$

- No oblique asymptote
- $y = x - 1$
- $y = x + 1$
- $y = x - 6$

6.

[3.7.4aPT] Select the graph of $y = \frac{x+1}{x(x+2)}$.





7.

[3.8.1aPT] Solve $2(2x + 1)(x + 1)(x - 3) \geq 0$

- $(-\infty, -1] \cup [-\frac{1}{2}, 3]$
- $[-1, -\frac{1}{2}] \cup [0, 3]$
- $[-1, -\frac{1}{2}] \cup [3, \infty)$
- $(-\infty, -\frac{1}{2}] \cup [3, \infty)$
- none of these

8.

[3.8.1BPT] Solve $x^2 + x \leq 20$

- $(-\infty, -4] \cup [5, \infty)$
- None of these

$(-\infty, -5] \cup [4, \infty)$

$[-4, 5]$

$[-5, 4]$

9.

[3.8.2aPT]Solve $\frac{4x-8}{1-x} \geq 0$

$(-\infty, 1) \cup [2, \infty)$

$(-1, 2]$

$[2, \infty)$

$[1, 2]$

$(1, 2]$

10.

[4.1.1aMSPT]Select the formulas of ALL one-to-one functions

$f(x) = x^2 + x + 1$

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

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

$f(x) = x + 1$

$f(x) = 2$

11.

[4.1.2aPT]Choose the formula for the inverse of the function $f(x) = \frac{-2x+1}{-x+2}$.

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

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

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

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

12.

[4.1.2bPT] If $f(x) = a(x + 2)^2 + 1$ on $(-\infty, -2)$ and $a > 0$, then the inverse function is

$f^{-1}(x) = \frac{1}{a(x+2)^2+1}$ on $(-\infty, -2)$

$f^{-1}(x) = -\sqrt{\frac{x-1}{a}} - 2$ on $(1, \infty)$

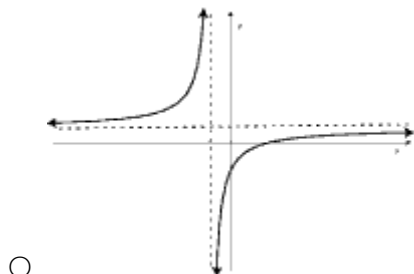
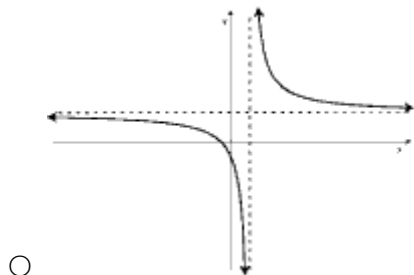
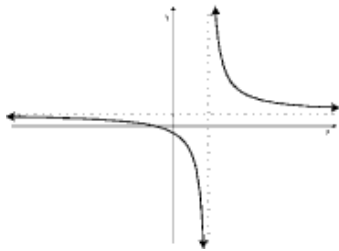
$f^{-1}(x) = \sqrt{\frac{x-1}{a}} - 2$ on $(-\infty, -2)$

$f^{-1}(x) = -\sqrt{\frac{x-1}{a}} - 2$ on $(-\infty, -2)$

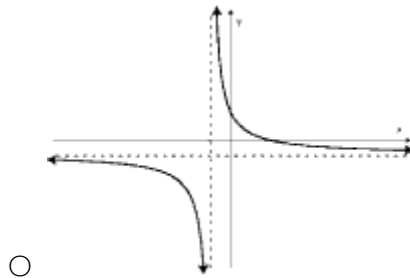
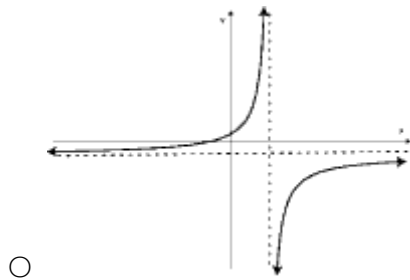
$f^{-1}(x) = \sqrt{\frac{x-1}{a}} - 2$ on $(1, \infty)$

13.

[4.1.3aPT] Select the graph of the inverse of the function shown below

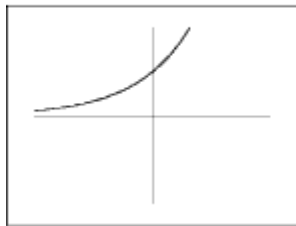


This function has no inverse



14.

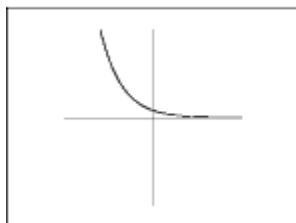
[4.2.1aPT] Select the equation of the following graph.



- $y = -\left(\frac{1}{a}\right)^{-x}, 0 < a < 1$
- $y = \left(\frac{1}{a}\right)^{-x}, 0 < a < 1$
- $y = -\left(\frac{1}{a}\right)^x, 0 < a < 1$
- $y = \left(\frac{1}{a}\right)^x, 0 < a < 1$

15.

[4.2.1cPT] Select the equation of the following graph.



- $y = a^{-(1+x)}, 1 < a$
- $y = a^{-(1+x)}, 0 < a < 1$

- $y = -(1 + a^x), 1 < a$
- $y = -(1 + a^x), 0 < a < 1$

16.

[4.2.1dPT] Select the graph of $y = a^{1-x}, 1 < a$.

