Last Name:_____ First Name:_____

1.) _____ 12.) _____

2.) _____ 13.) _____

3.) _____ 14.) _____

4.) _____ 15.) _____

5.) _____ 16.) _____

6.) _____ 17.) _____

7.) _____ 18.) _____

8.) _____ 19.) _____

9.) _____ 20.) _____

10.) _____ 21.) _____

11.) _____

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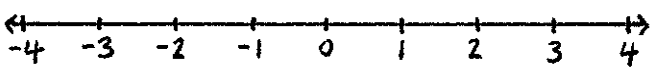
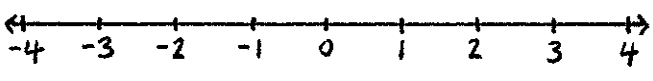
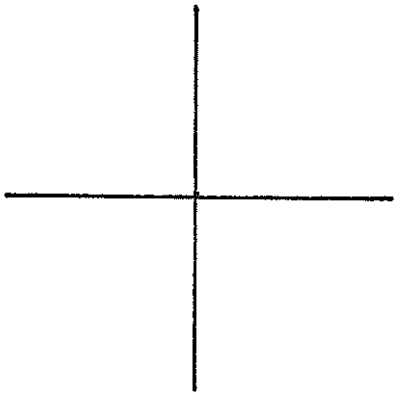
22.) $p(x)$



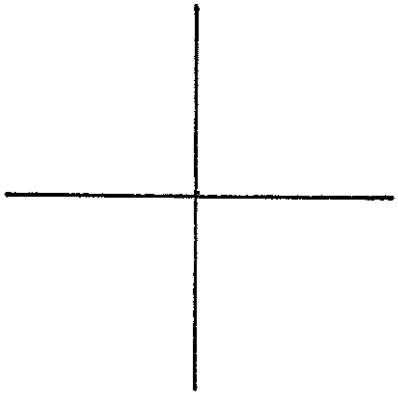
23.) $r(x)$



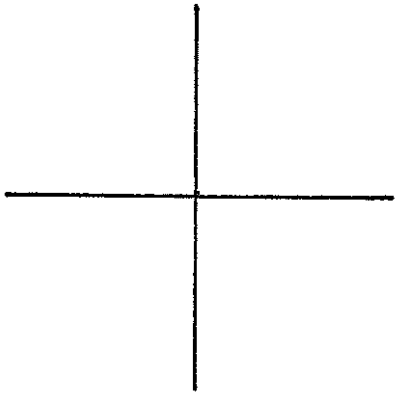
24.) e^x



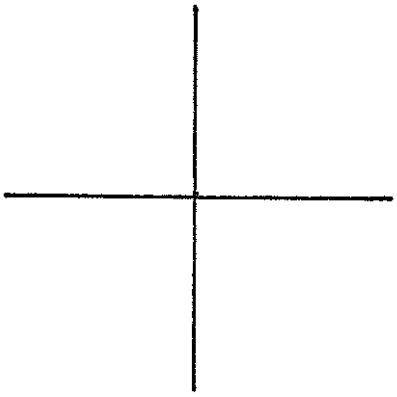
25.) $\log_e(x)$



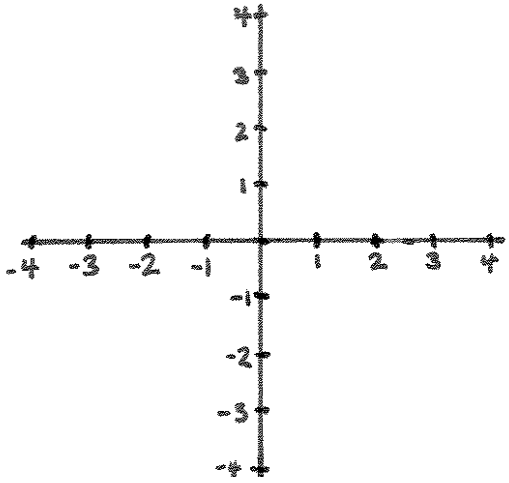
26.) $e^x - 1$



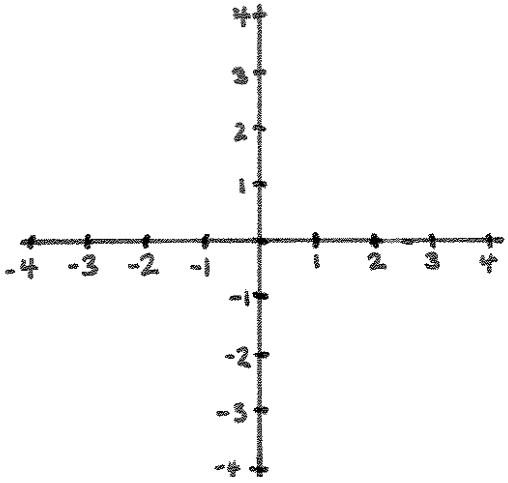
27.) $\log_e(x + 2)$



28.) $f(x)$



29.) $g(x)$



Third Practice Exam

For #1-6 write the entire word "True" or the entire word "False".

1.) $a^x a^y = a^{x-y}$

2.) $\frac{a^x}{a^y} = a^{xy}$

3.) $\log_a(zw) = \log_a(z) + \log_a(w)$

4.) $\log_a(z^w) = \log_a(z)^w$

5.) $\log_a(\frac{z}{w}) = \log_a(z)\log_a(w)$

6.) $(a^x)^y = a^{x+y}$

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7.) Write $5^{928}5^{-900}5^{-26}$ as a rational number in standard form.

8.) Write $(4^{\frac{2}{5}})^{\frac{15}{2}}$ as a rational number in standard form.

9.) Write $1,000,000^{\frac{2}{3}}$ as a rational number in standard form.

10.) Write $(\frac{9}{4})^{-\frac{3}{2}}$ as a rational number in standard form.

11.) Write $\log_{10}(10,000)$ as a rational number in standard form.

12.) Write $\log_5(\frac{1}{\sqrt[10]{125}})$ as a rational number in standard form.

13.) What is the greatest integer that is less than $\log_4(50)$?

14.) Solve for x if $e^x = 5$

15.) Solve for x if $\log_4(x) = -3$
(Write your answer as a rational number in standard form.)

16.) Solve for x if $4e^{x-3} = 8$

17.) Solve for x if $\log_e(x+2) - 7 = 9$

18.) Solve for x if $e^{3x+1} = \frac{4}{e^{2x}}$

19.) Solve for x if $\log_e(x^2+x) - 2 = \log_e(x)$

20.) Find a root of $x^3 + x^2 - x + 2$

21.) (2 pts.) Completely factor $4x^3 - 4x^2 - 5x + 3$ (Hint: -1 is a root.)

22.) Graph $p(x) = -3(x+1)(x-2)(x-2)(x^2+7)$

23.) Graph

$$r(x) = \frac{2(x+2)(x^2+3)}{-5(x-2)(x-2)}$$

24.) Graph e^x and label its y-intercept.

25.) Graph $\log_e(x)$ and label its x-intercept.

26.) Graph $e^x - 1$ and label its x- and y-intercepts (if there are any).

27.) Graph $\log_e(x+2)$ and label its x- and y-intercepts (if there are any).

28.) Graph $f : (-1, 2] \to \mathbb{R}$ where $f(x) = -2x$.

29.) Graph $g : [-2, 1) \to \mathbb{R}$ where $g(x) = -x^2$.