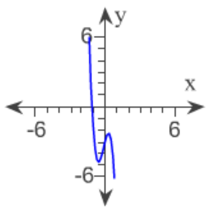
Student: ____________________	**Instructor:** Garth Isaak	**Assignment:** Polynomial etc functions practice diagnostic 2b
Date: ____________________	**Course:** precalc blitzer (1)	
Time: ____________________	**Book:** Blitzer: Precalculus Essentials, 3e	

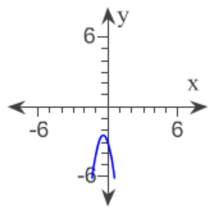
1. Use the Leading Coefficient Test to determine the end behavior of the polynomial function. Then use this end behavior to match the function with its graph.

$f(x) = -8x^3 - 3x^2 + 4x - 3$

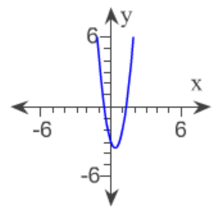
A. rises to the left and falls to the right



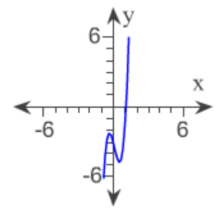
B. falls to the left and falls to the right



C. rises to the left and rises to the right



D. falls to the left and rises to the right



2. Find a rational zero of the polynomial function and use it to find all the zeros of the function.

$f(x) = x^3 + 8x^2 + 14x + 4$

A. $\{-2, -3+\sqrt{7}, -3-\sqrt{7}\}$

B. $\{1, -1, -4\}$

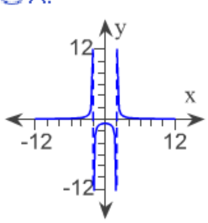
C. $\{2, -6+\sqrt{7}, -6-\sqrt{7}\}$

D. $\{-2, -6+\sqrt{4}, -6-\sqrt{4}\}$

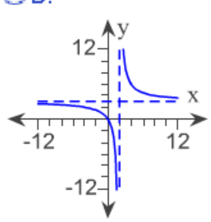
3. Graph the rational function.

$f(x) = \dfrac{3x}{x^2 - 4}$

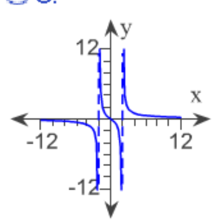
A.



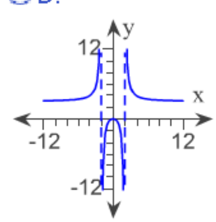
B.



C.



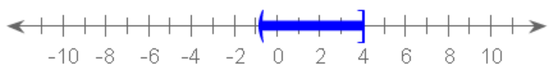
D.



4. Solve the rational inequality and graph the solution set on a real number line. Express the solution set in interval notation.

$$\frac{12-3x}{7x+5} \le 0$$

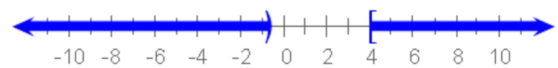
A. $((-5/7),4]$



B. $(-\infty,(-5/7)]$ or $[4,\infty)$

C. $[4,\infty)$

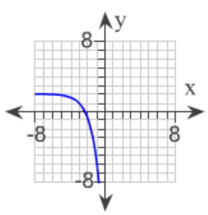
D. $(-\infty,(-5/7))$ or $[4,\infty)$



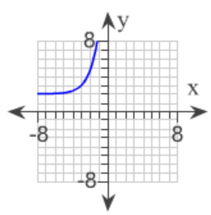
5. Graph the function.

Use the graph of $f(x) = e^{x}$ to obtain the graph of $g(x) = e^{x+3} + 2$.

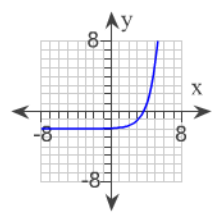
A.



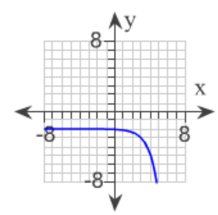
B.



C.



D.



6. Use properties of logarithms to expand the logarithmic expression as much as possible. Where possible, evaluate logarithmic expressions without using a calculator.

$\log_b(yz^5)$

A. $\log_b 5y + \log_b 5z$

B. $5\log_b y + 5\log_b z$

C. $\log_b 5yz$

D. $\log_b y + 5\log_b z$

7. Solve the exponential equation. Express the solution set in terms of natural logarithms.

$4^{x+4} = 5^{2x+5}$

A. $\left\{\ln\left[\frac{5^5}{4^4} - \frac{4}{5^2}\right]\right\}$

B. $\{7 \ln 5 - 5 \ln 4\}$

C. $\left\{\frac{5 \ln 5 - 4 \ln 4}{\ln 4 - 2 \ln 5}\right\}$

D. $\{\ln 5 - \ln 4\}$

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1. A

2. A

3. C

4. D

5. B

6. D

7. C