MATH 1314

Test 4 Review (Alternate)

18 Multiple Choice Questions: Test 4

Find all real and complex zeros of the following polynomial: $p(x) = x^3 - 4x^2 + 27x - 108$

Determine the domain and range of the following: $f(x) = -2 \cdot 3^{x-7} - 5$

Domain:

Range:

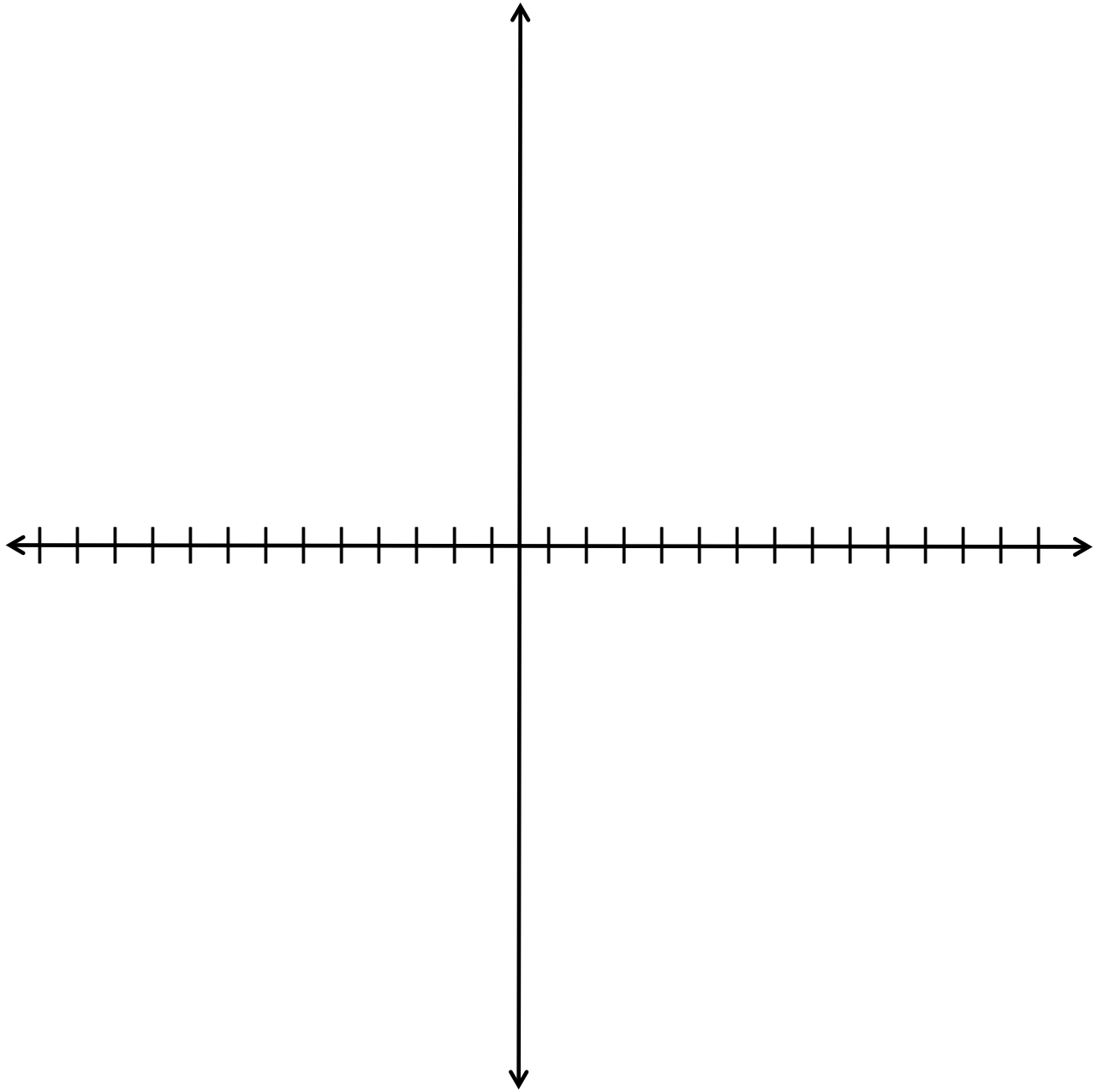
Determine the domain and range of the following: $f(x) = \log_5(2x + 3) - 5$

Domain:

Range:

For the following polynomial function, determine the following: $p(x) = (x - 3)(x + 2)^3(x + 5)^2$ *

- Degree
- End Behavior (Left and Right)
- All x-intercepts and their multiplicities
- The y-intercept
- Draw a rough sketch of the function (Next Slide)



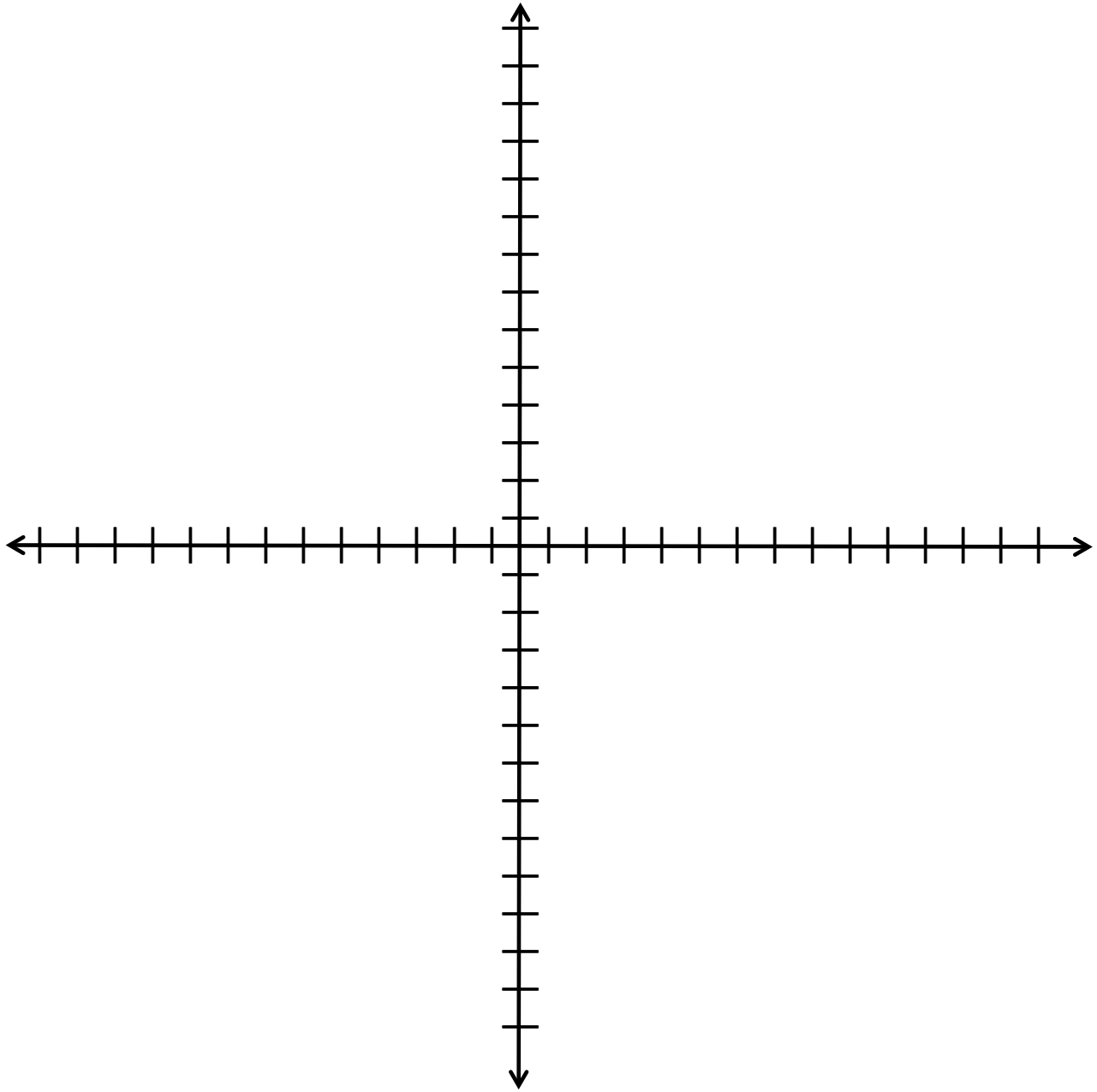
Determine the vertical asymptote of the following: $f(x) = \frac{x^2-4x-21}{x^2+11x+24}$

Determine the equation of the polynomial function with the following characteristics:

- Degree: 3
- Zeros located at: 8 and 5i
- Constant Coefficient: 800

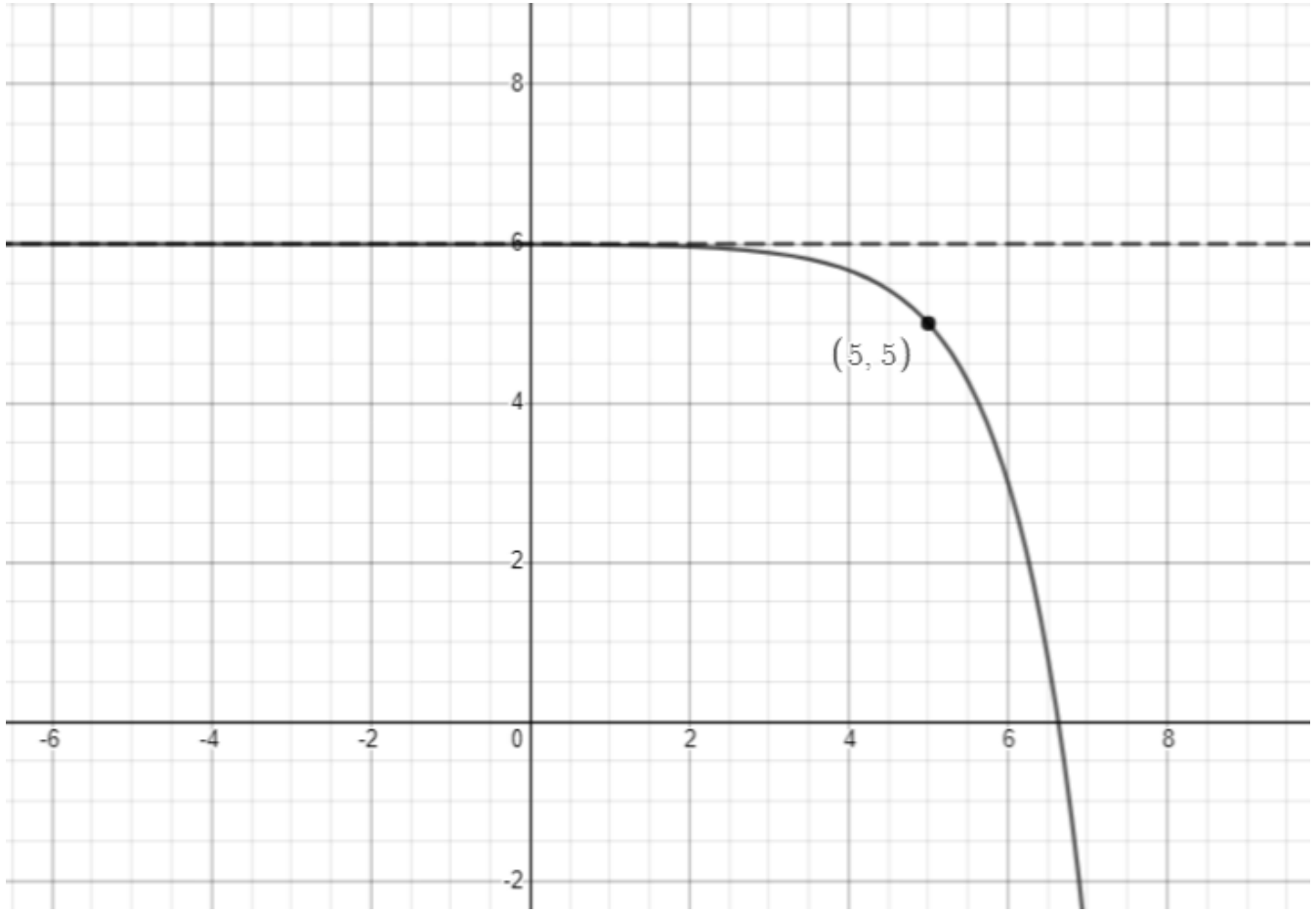
For the given function, find the following information: $f(x) = \frac{2x^2+2x-24}{5x^2-20x+15}$ *

- Location of the holes (if any)
- Location of the x-intercepts (if any)
- Location of the y-intercepts (if any)
- The equation of the vertical asymptote (if any)
- The equation of the horizontal asymptote (if any)
- Sketch the graph (next slide).



Identify the function from the listed options.

(Horizontal Asymptote and translated key point are provided)



a) $f(x) = 3^{x+5} - 6$

b) $f(x) = -3^{x+5} + 6$

c) $f(x) = 3^{x-5} - 6$

d) $f(x) = (-3)^{x-5} - 6$

e) $f(x) = 3^{x+5} + 6$

f) $f(x) = -3^{x-5} + 6$

g) $f(x) = -3^{x+5} - 6$

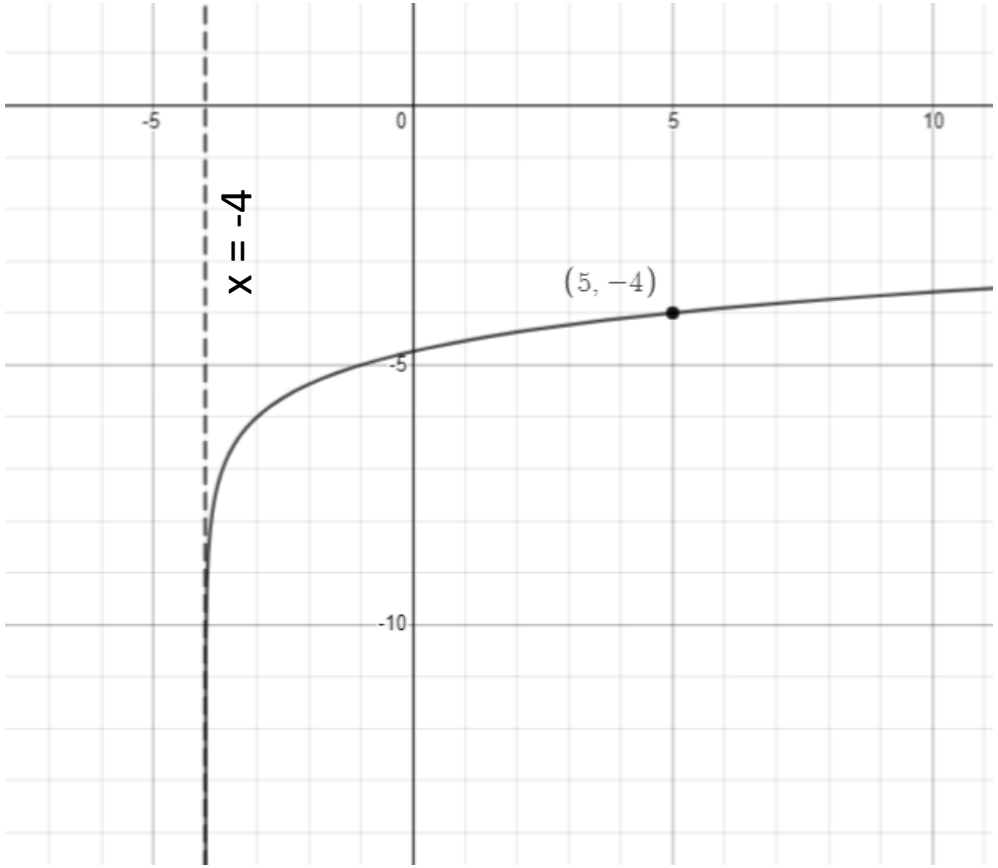
Give the equation of the asymptote of the following: $f(x) = log_{0.75}(2x - 7) + 6$

If the polynomial, $f(x) = x^4 + 3x^3 - x^2 + 27x - 90$, has one zero located at x = 2, find zeros of the function.

Determine the translation of the key point, (0,1), of the function: $f(x) = -e^{x-7} + 4$

Determine the equation of the horizontal asymptote of: $f(x) = \frac{7-8x^4}{2x^4+5x^3-3x^2+8x-5}$

Identify the illustrated function from the options listed. *(The vertical asymptote is provided.)*



a) $f(x) = \log_3(x - 4) - 6$
b) $f(x) = \log_4(x + 4) + 6$
c) $f(x) = -\log_3(x - 4) - 6$
d) $f(x) = \log_3(x + 4) - 6$
e) $f(x) = \log_1(x + 4) - 6$
f) $f(x) = \log_3(x + 4) + 6$
g) $f(x) = \log_{(-2)}(x - 4) - 6$
h) $f(x) = \log_3(x + 4) - 6$
i) $f(x) = \log_4(x + 4) - 6$

Determine the equation of the asymptote of for the following: $f(x) = -2.4 \cdot 5^{x+2} - 8$

Evaluate the following logarithms. *

- $\log_3(81)$
- $\log(0.001)$
- $\ln(e^{17})$
- $8^{\log_8 \sqrt{2}}$
- $0.3^{\log_{(0.3)} 9}$
- $e^{\ln(-4)}$
- $\log_{(-3)}(1/81)$
- $\log_5(625)$