

sections 3.1,3.2,3.6,3.3,4.1,4.2,4.3,4.4

1	For $y = 2x^2 + 12x - 1$, find the vertex.
2	Find the quadratic equation with vertex (3,4) and through point (1,12).
3	At most how many turning points does a polynomial of degree 7 have?
4	Find the x – <i>int</i> , y – <i>int</i> , <i>end – behavior</i> , and <i>do a \pm analysis for $f(x) = x^2(x^2 - 9)$</i> Graph .
5	Find the x – <i>int</i> , y – <i>int</i> , <i>end – behavior</i> , <i>graph</i> and \pm <i>analysis for $f(x) = \frac{2x+4}{x-3}$.</i>
6	Find any horizontal and vertical asymptotes for $f(x) = \frac{3x^2-5x+6}{x^2-4x-5}$. (The horizontal asymptote is found the same way we find the end-behavior.)
7	Find the quotient and remainder when $f(x) = x^4 - 3x^2 + 1$ is divided by $x + 2$.
8	What is the domain and range of $y = 2^x$? Sketch the graph.
9	What is the domain and range of $y = \ln x$? Sketch the graph.
10	Sketch the graph of $y = \log_2(x + 1) + 3$.
11	Sketch the graph of $y = 2^{x+1} - 1$. Find x and y intercepts.
12	Sketch the graph of $y = -\left(\frac{1}{2}\right)^{x-2}$
13	Solve for x : $2^x = \frac{1}{\sqrt{8}}$
14	Solve for x : $3^{2x+1} = 1$
15	Solve for x : $2^{3x+1} = 4^{5x-2}$
16	Solve for x : $5 \cdot 3^x = 45$
17	An amount of \$500 is invested at 5% compounded continuously for 10 years. What is the investment worth at the end of the 10 year period?
18	Suppose \$1000 is invested for 10 years at a rate of r compounded continuously. At the end of 10 years there is \$2000 in the account. Find r .
19	How long does it take for \$500 to grow to \$1000 at 7% compounded twice a year.
20	What is the inverse of $y = 5^x$?
21	What is the inverse of $y = e^x$?
22	Write the exponential expression as an equivalent log expression: A) $2^3 = 8$ B) $3^{-2} = \frac{1}{9}$ C) $4^{1/2} = 2$ D) $10^{-2} = .01$
23	$\log_2 \sqrt{32} =$
24	$\ln e^4 =$

25	$\ln \sqrt{e} =$
26	$\log_{1/3} 9 =$
27	$\log_{10} 1000 =$
28	Expand using log properties: $\ln \frac{a^3 b^3}{c^5 d^4}$
29	If $\ln x = a, \ln y = b, \ln z = c$, find $\ln \frac{x^5 \cdot \sqrt{y}}{x^3}$
30	Expand using log properties: $\ln \frac{\sqrt{2x+5}}{(3x+10)^5 (x+7)^4} =$
31	Write as a single logarithm: $5 \log(3x - 2) - 2 \log(x^2 + 1) + 7 \log(3x^2 + 5)$
32	Find the exact value of $\ln \frac{e^2}{\sqrt{e}}$
33	Solve for x : $\log_2(2x + 1) = 3$
34	Solve for x : $\log_2(2x + 1)^3 = 12$
35	Solve for x : $2^x = 5$
36	Solve for x : $(3)2^x = 5$
37	Solve for x : $3^{x+1} = 5^x$
38	Solve for x : $2^x = 5^{x+1}$
39	Solve for x : $(3)2^x = 7^{x+1}$
40	Solve for x : $\log_5(x + 3) - \log_5(x - 1) = 1$
41	Solve for x : $\log_2(x + 5)^2 = 8$.