COLLEGE ALGEBRA QUIZ

(1) Which of the following is the graph of $f(x) = (\frac{1}{3})^x$?

(a)

(b)

(c)

(d)
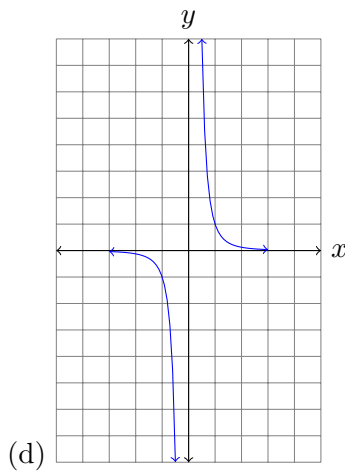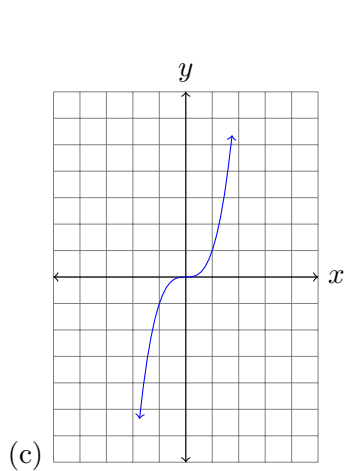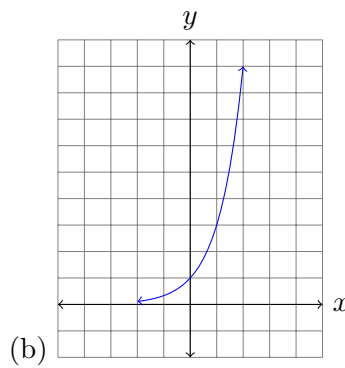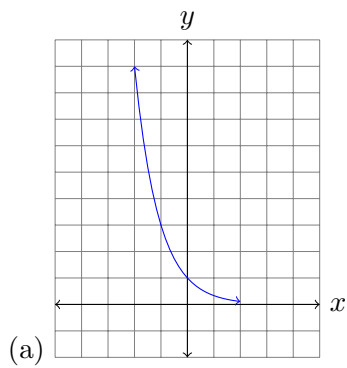
Solution: (a)

(2) Which of the following is the graph of $f(x) = 1 + e^x$?

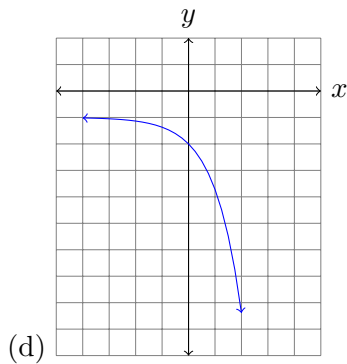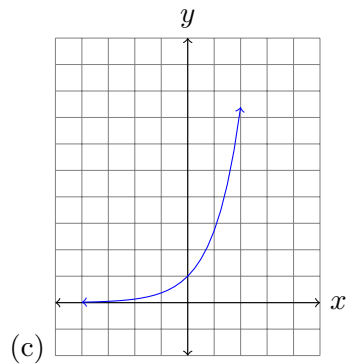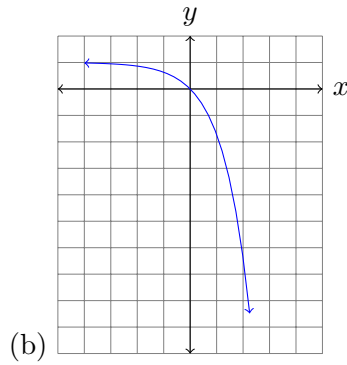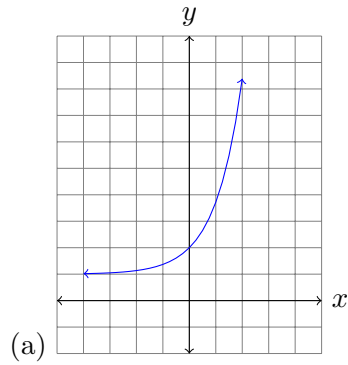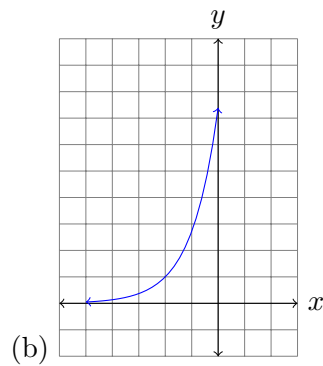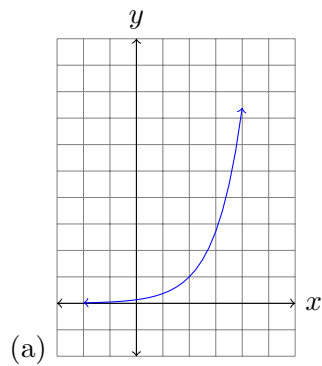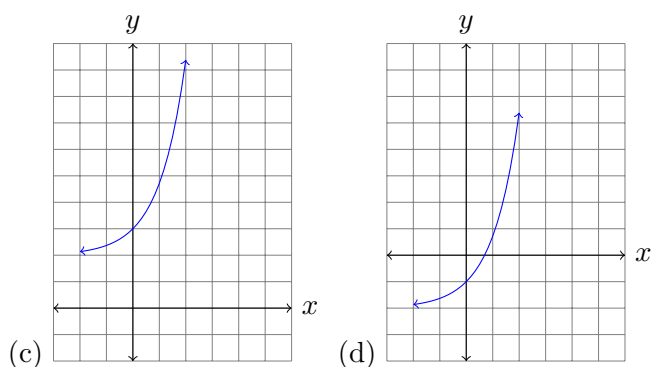(a)

(b)

(c)

(d)

Solution: (a)

(3) Which of the following is the graph of $f(x) = e^{(x-2)}$

(a)

(b)

(c) (d)

Solution: (a)

(4) Which of the following is the graph of $f(x) = 2(1 - e^{(-x)}), x \geq 0$?

(a) (b)

(c) (d)
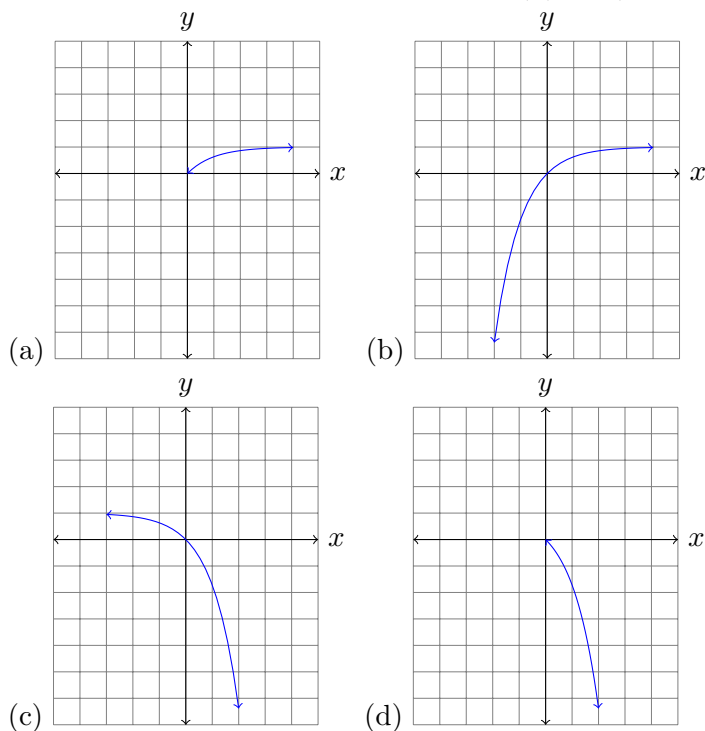
Solution: (a)

(5) Blake deposits \$25,000 in a college trust fund for her daughter. The fund earns 3.5% interest, compounded quarterly.

(a) Determine the function which will represent the amount of money in the account after t years.

Solution: $A(t) = 25000(1.00875)^{4t}$

(b) Determine the amount of money in the account after 0, 5, 10 and 20 years.

Solution: $25,000; $29,758.49; $35,422.72; $50,190.77

(6) The following function represents the exponential growth of a bacterial culture,
$$N(t) = 81,950 \cdot e^{0.23 \cdot t}$$

t is the number of hours since the culture was inoculated. Use this function to estimate the number of bacteria present after 5 hours.
Solution: $258,813.9

(7) Determine the horizontal asymptote of the graph of $f(x) = e^{x-3} + 5$
Solution: $y = 5$