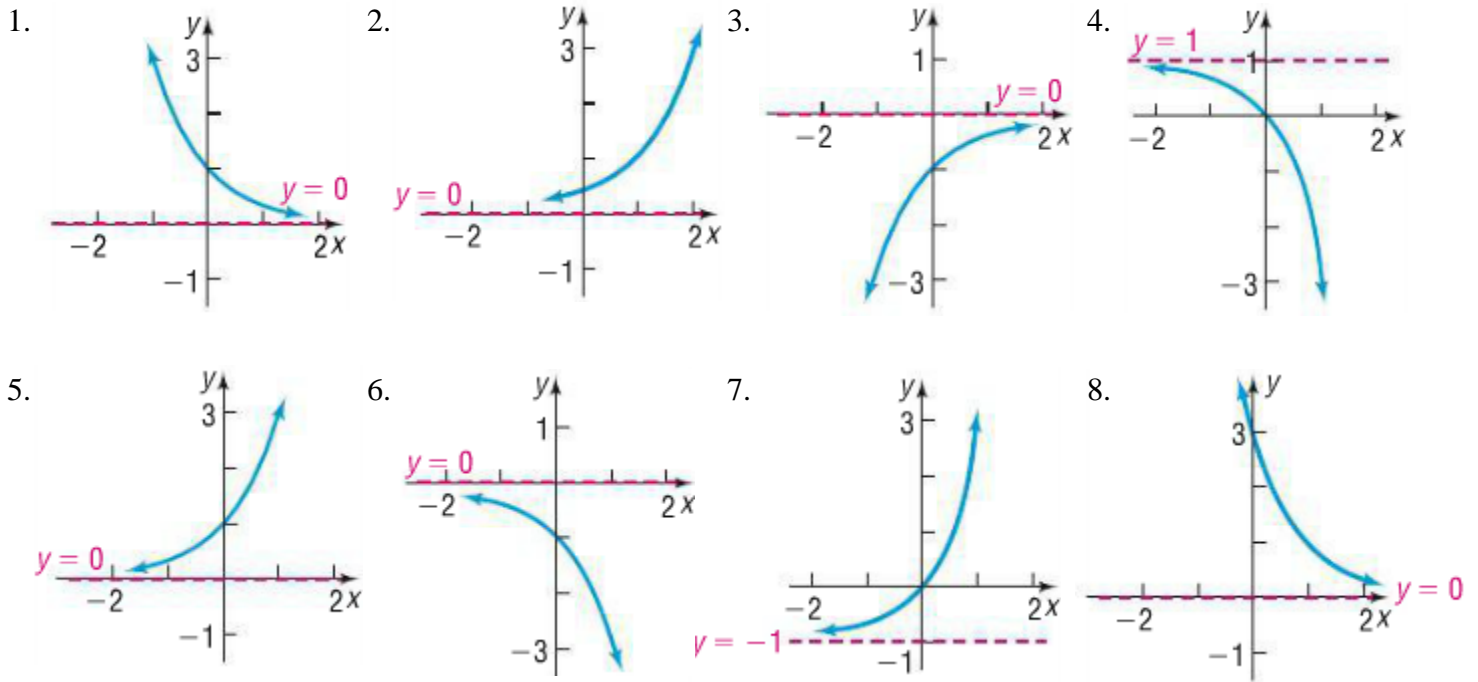


In problems 1-8, the graph of an exponential function is given. Match each graph to one of the following functions.

- (A) $y = 3^x$ (B) $y = 3^{-x}$ (C) $y = -3^x$ (D) $y = -3^{-x}$
 (E) $y = 3^x - 1$ (F) $y = 3^{x-1}$ (G) $y = 3^{1-x}$ (H) $y = 1 - 3^x$



Draw each graph. Either make an x, y table and label at least 3 *exact* (no decimals!) key points on the graph (use transformations). State the domain and range. Label the horizontal asymptote.

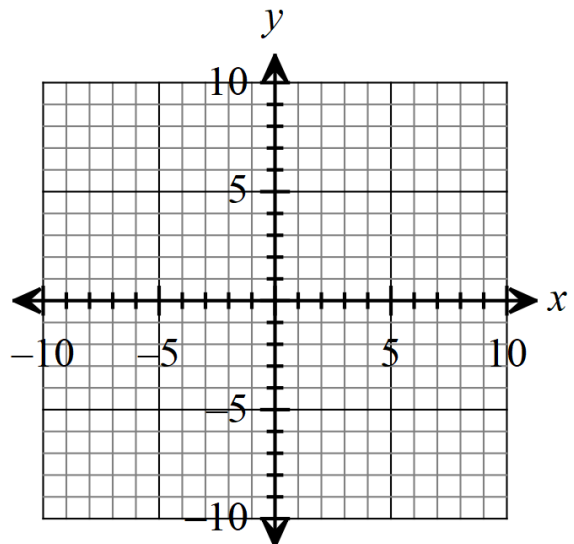
9. $f(x) = 2^x + 2$

Transformations

x	$f(x)$

Domain: _____

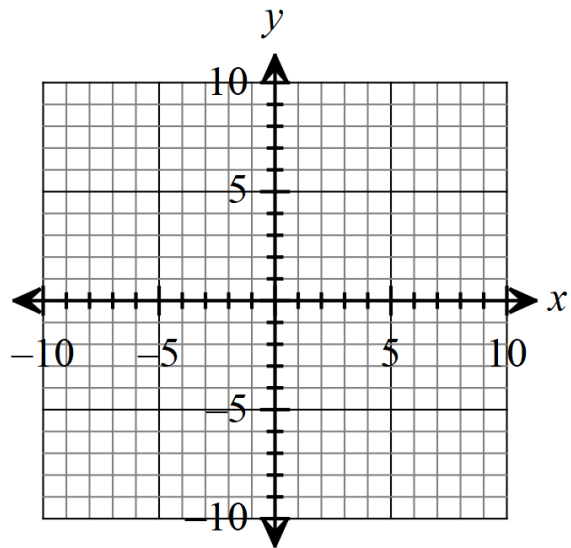
Range: _____



10. $f(x) = \left(\frac{1}{3}\right)^{x-3}$

Transformations

x	$f(x)$



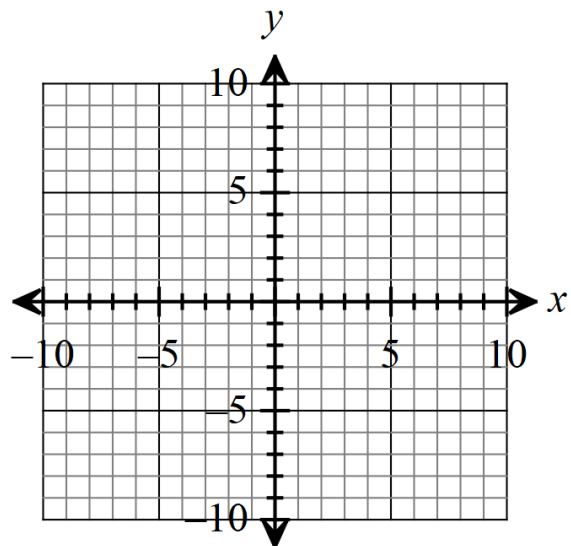
Domain: _____

Range: _____

11. $f(x) = 3 \cdot \left(\frac{1}{2}\right)^x$

Transformations

x	$f(x)$



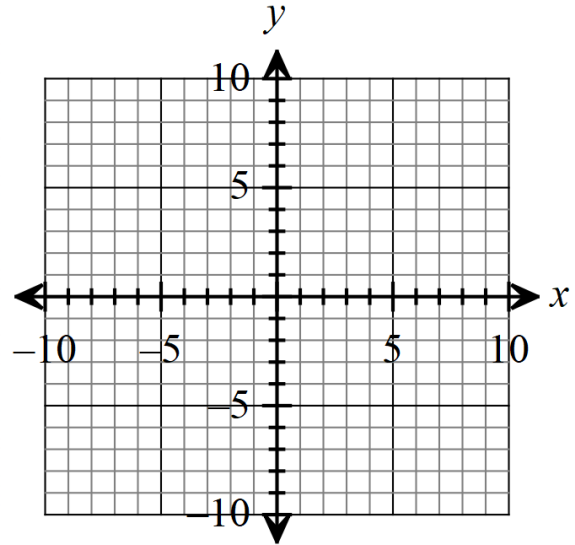
Domain: _____

Range: _____

12. $f(x) = -3^x + 4$

Transformations

x	$f(x)$



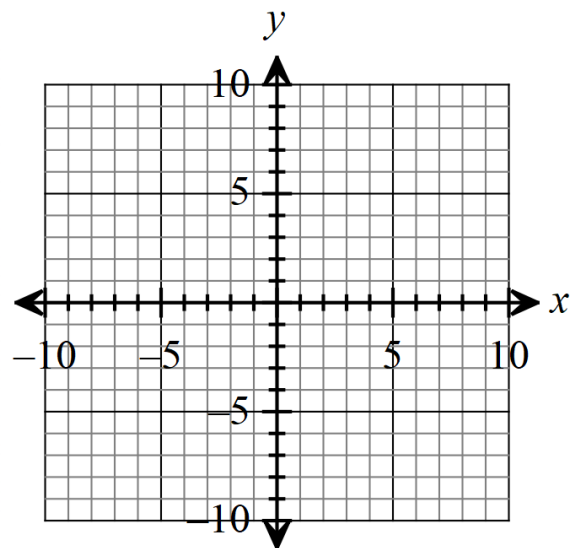
Domain: _____

Range: _____

13. $f(x) = 2^{-x} - 2$

Transformations

x	$f(x)$



Domain: _____

Range: _____

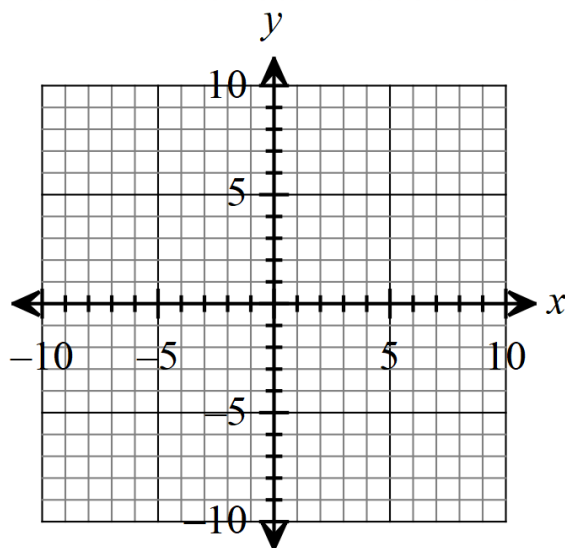
14. $f(x) = 4^{\frac{x}{2}}$

Transformations

x	$f(x)$

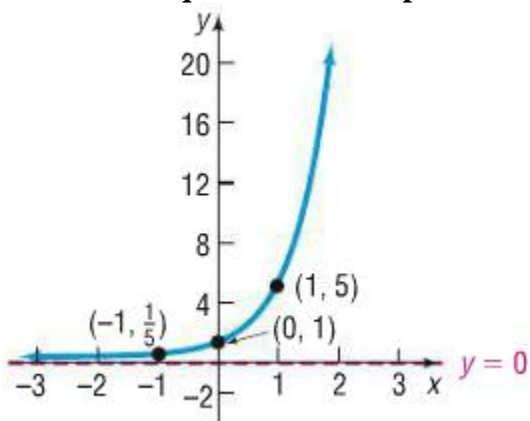
Domain: _____

Range: _____

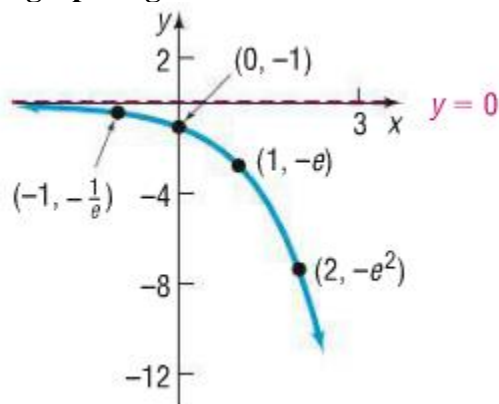


Determine the equation of the exponential function whose graph is given.

15.



16.



Solve each equation.

17. $5^x = 5^7$

18. $2^{-x} = 16$

19. $3^{x+5} = \frac{1}{27}$

20. $\left(\frac{1}{4}\right)^x = \frac{1}{64}$

21. $2^{2x-1} = 32$

22. $5^{4x} = 25^{x-2}$

Solve each equation.

$$23. 3^{x^3} = 81^x$$

$$24. 3^{x^2-7} = 27^{2x}$$

$$25. 4^{3x} \cdot (4)^x = 4^{x+1}$$

$$26. 27^{x^2} \cdot 9^{2x} = \frac{1}{3}$$

$$27. e^{x^2} = e^{6x} \cdot \frac{1}{e^5}$$