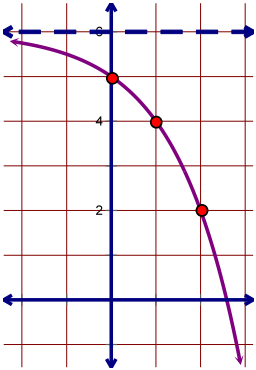


Sketch a complete graph.

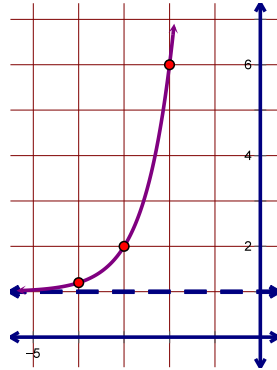
1. $a(x) = \left(\frac{1}{4}\right)^{x-2} + 3$ 2. $b(x) = 2 \cdot 3^{x+1} - 4$ 3. $c(x) = -\left(\frac{1}{2}\right)^{x-1}$ 4. $d(x) = 2^{-\frac{x}{4}} - 5$

Find the equation of the function.

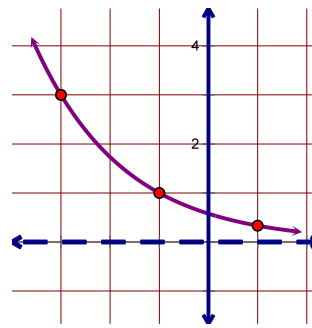
5. Base 2



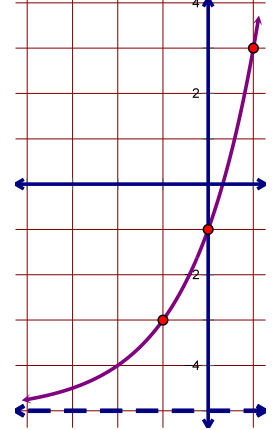
6. Base 5



7. Base $\frac{1}{3}$



8. Base $\frac{1}{2}$



Simplify.

9. $x^3 \cdot x^8$ 10. $\frac{y^8}{y^2}$ 11. $\frac{a^4}{a^9}$ 12. $\frac{4z^3}{6z^2}$ 13. $\frac{12pt^4}{20t^8}$ 14. $(c^5)^3$ 15. $(6x)^2$
16. $(-x)^5$ 17. $(-x)^6$ 18. $(-2d)^3$ 19. $(5x)^0$ 20. $(5a^6b)^3$ 21. $(-3k^7)^4$ 22. $(-3m^5)^3$
23. $(m^2n^4)(m^5n)$ 24. $(-g^7h^2)(-h^6)$ 25. $(3b^3c^{-2})(-2c^9)$ 26. $(a^2b)^2(ab^3)$ 27. $(xy)^6(x^2y^3)$
28. $(4x)^2(-x^5y)$ 29. 3^{-4} 30. $\left(\frac{2}{3}\right)^{-3}$ 31. $(4a^3)^{-2}$ 32. $\frac{(8x^3)^2}{(4x^2)^3}$ 33. $\left(\frac{12a^2b^5}{6a^7b}\right)^3$

For each sequence:

- a. Determine whether the sequence is arithmetic, geometric or neither.
b. If arithmetic, give the common difference; if geometric, give the percent change.

34. 100, 105, 110, 25, ... 35. $u_0 = 55$
 $u_n = u_{n-1} - 17$ 36. -44, -32, -20, -8, ... 37. $u_0 = 15$
 $u_n = 0.875u_{n-1}$

38. Write explicit equations for #34-37.

39. Using your equations from #38, find u_{15} for #34-37.