

## Unit 2 Class-work Sections 2.1-2.3

**Simplify. Your answer should contain only positive exponents.**

1)  $6x^2y^5 \cdot 4x^4$

2)  $u^{-2}v^3 \cdot (u^{-5}v^6)^4$

3)  $\frac{a^{-3}b^{-4} \cdot 3b^{-3}}{6a^4b^6}$

4)  $\frac{x^5y^{-6} \cdot x^5y^3}{(x^{-3}y^5)^{-4}}$

**Solve each equation.**

5)  $2^{3x} = 2^{-3x}$

6)  $6^{-3r+1} = 6^2$

7)  $243^{-3k+2} = 27$

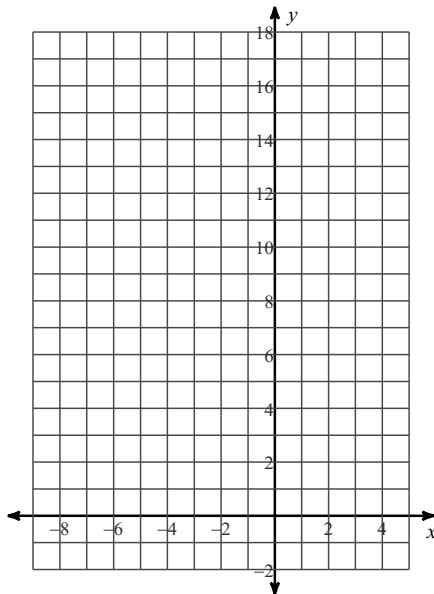
8)  $216^{2k} = 36^{3k}$

9)  $625^{1-b} = \left(\frac{1}{25}\right)^{3b+1}$

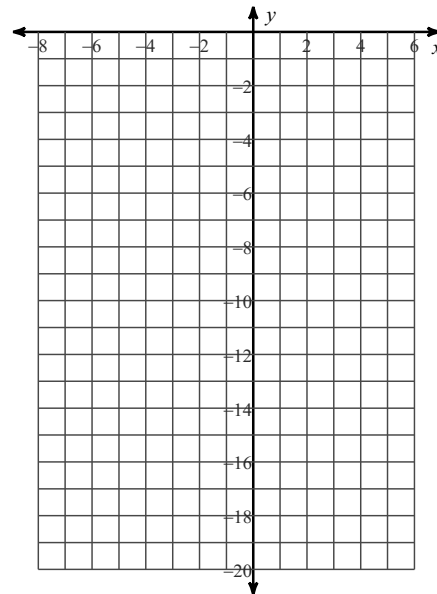
10)  $81^{x+3} = \left(\frac{1}{27}\right)^{3-x}$

**For each function below: 1) List the transformations, 2) State the Asymptote, 3) Identify the Domain & Range, 4) Sketch the graph of the function.**

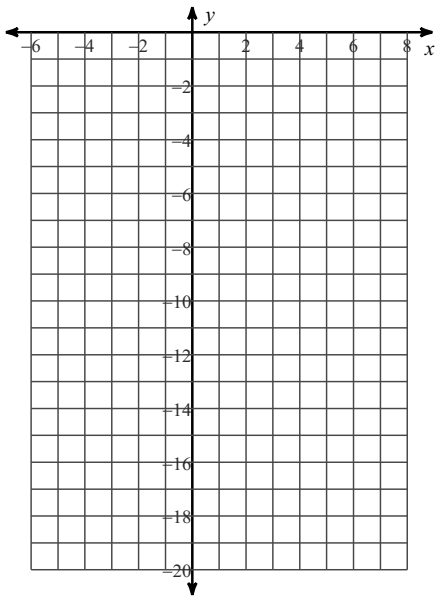
11)  $f(x) = 2 \cdot \left(\frac{1}{3}\right)^{x+2} - 2$



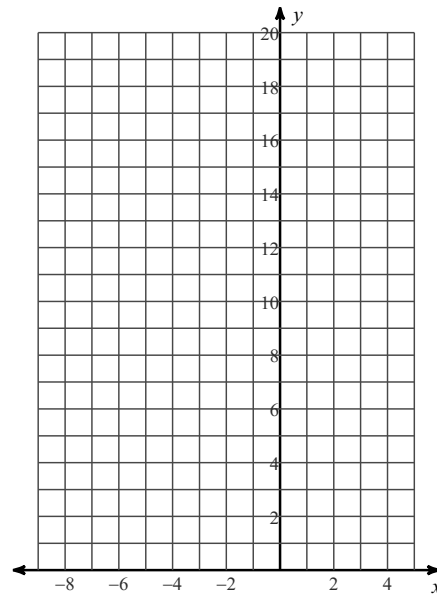
12)  $f(x) = -\frac{1}{4} \cdot \left(\frac{1}{2}\right)^{x+1} - 1$



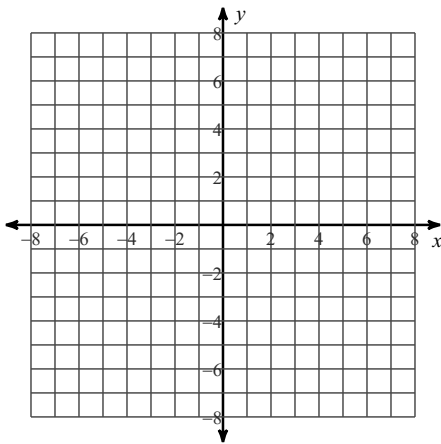
$$13) f(x) = -4 \cdot \left(\frac{1}{2}\right)^{x-1} - 2$$



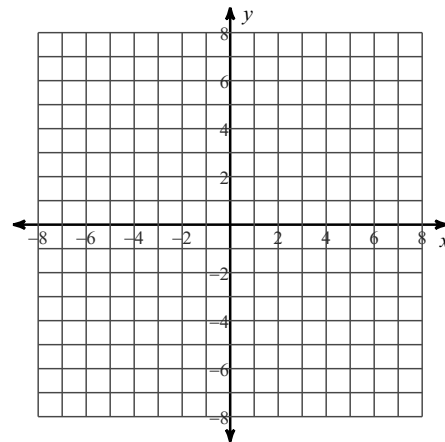
$$14) f(x) = 3 \cdot \left(\frac{1}{2}\right)^{x+2} + 1$$



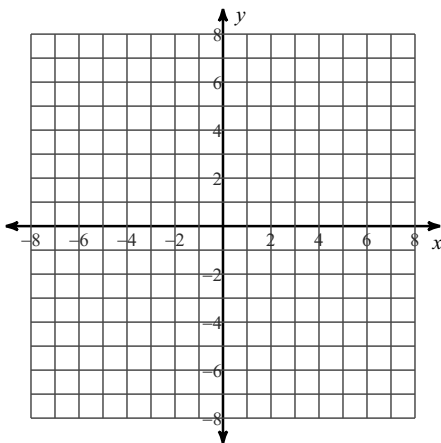
$$15) y = \log(x + 6)$$



$$16) y = \log_5(x - 3) - 2$$



$$17) y = \log_5(x - 2) - 3$$



$$18) y = \log_{\frac{1}{2}}(x - 1) + 3$$

