

Final Exam Test Review Part 1

Determine if the sequence is arithmetic. If it is, find the common difference, the 52nd term, and the explicit formula.

1) $-36, -40, -44, -48, \dots$

2) $26, 28, 30, 32, \dots$

3) $-28, -19, -10, -1, \dots$

4) $-12, -112, -212, -312, \dots$

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, and the explicit formula.

5) $-3, -15, -75, -375, \dots$

6) $3, 9, 27, 81, \dots$

7) $185, 1854, 18544, 185444, \dots$

8) $1, 9, 25, 49, \dots$

Simplify. Your answer should contain only positive exponents.

9) $3x^3y^4 \cdot 4y^4$

10) $4y^{-1} \cdot 2xy$

11) $yx^3 \cdot 3xy$

12) $3y^4 \cdot 2yx^{-1} \cdot 2x^4y^{-4}$

13) $(x^2y^{-3})^{-3}$

14) $(yx^2)^3$

15) $(4a^{-4}b^2)^2$

16) $(2u^4v^{-1})^{-3}$

17) $\frac{m^3 \cdot 3m}{3m}$

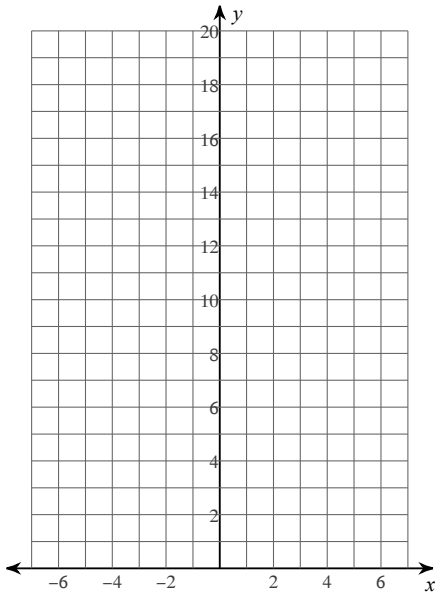
18) $\frac{3a^2 \cdot a}{2a^0}$

19) $\frac{2n}{2n^0 \cdot 3n}$

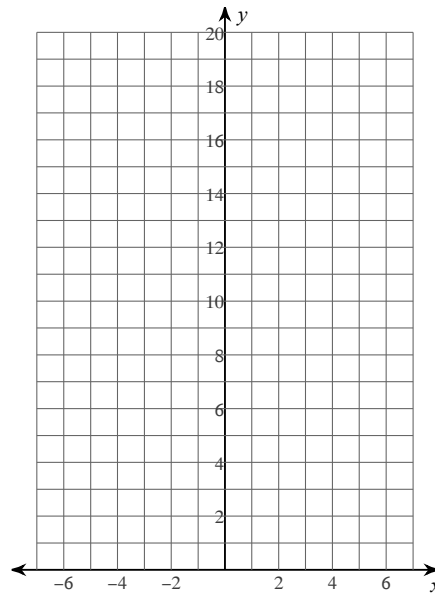
20) $\frac{2n^2 \cdot 3n^3 \cdot n^2}{3n^3}$

Sketch the graph of each function and state if the graph represents exponential growth or decay.

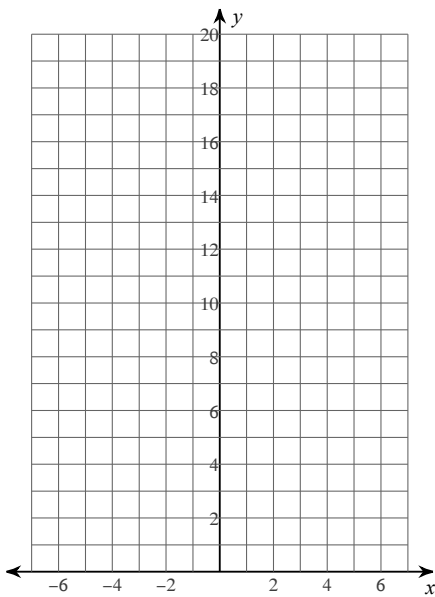
21) $y = 2 \cdot 2^x$



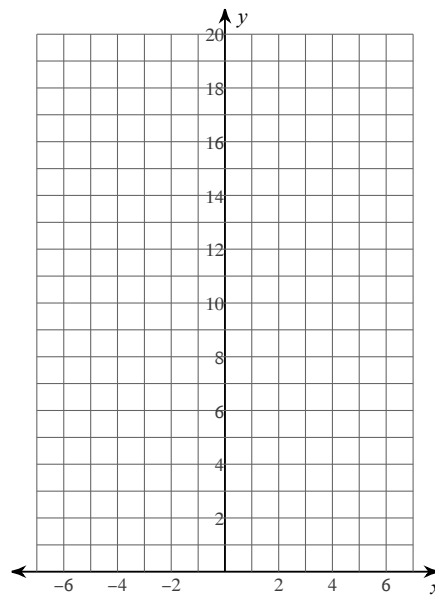
22) $y = \frac{1}{2} \cdot 3^x$



23) $y = 4 \cdot \left(\frac{1}{2}\right)^x$



24) $y = \frac{1}{4} \cdot \left(\frac{1}{5}\right)^x$



Solve each equation.

25) $n^{\frac{5}{3}} = 3125$

26) $27 = v^{\frac{3}{4}}$

27) $125 = k^{\frac{3}{2}}$

28) $x^{\frac{4}{3}} = 625$