

Exponents and Exponential Growth & Decay Test Review

Period _____

Simplify. Your answer should contain only positive exponents.

1) $4x^4 \cdot x^4 \cdot 2x^3$

2) $4a^3 \cdot 4a^4$

3) $(2m^4)^2$

4) $(v^2)^2$

5) $\frac{2p}{p^4}$

6) $\frac{2m^4}{m^2}$

7) $2u^3v^2 \cdot 3u^3v^0$

8) $2a^2b^2 \cdot 3ba^2$

9) $(3y^2)^0$

10) $(4a^4)^4$

11) $\frac{2n^2}{4mn^3}$

12) $\frac{2u^3v^4}{4uv^0}$

13) $2a \cdot 4a^{-1}$

14) xx^0

15) $(3v^2)^4$

16) $(x^4)^{-3}$

17) $\frac{x^0}{2x^{-2}}$

18) $\frac{4n^4}{4n^{-3}}$

19) $(mn^2 \cdot 2n^0)^4$

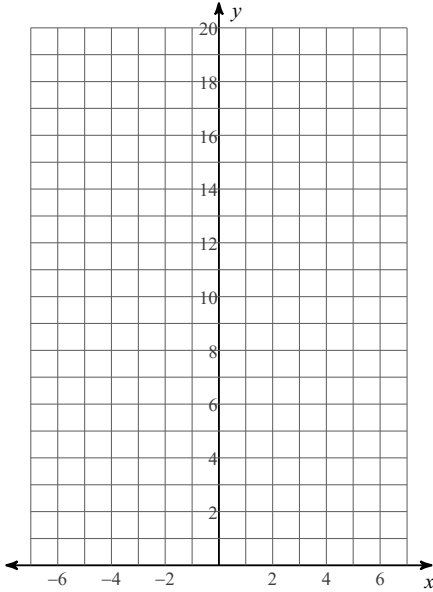
20) $(2n^4)^4 \cdot 2m^3n^2$

21) $\frac{3x^0}{3yx^3 \cdot 3x^2y^2}$

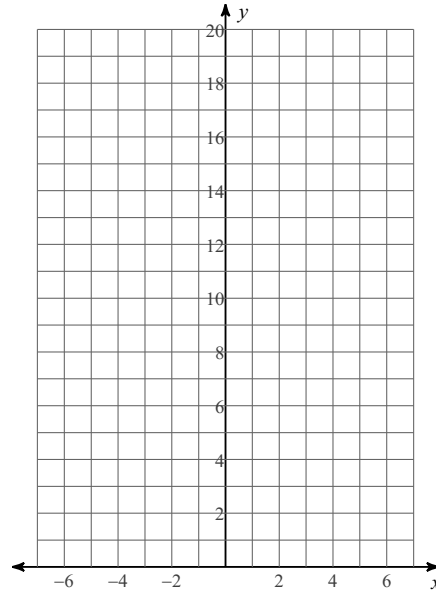
22) $\frac{4a^0b^3}{4ba^3 \cdot 2a^4b^3}$

Sketch the graph of each function.

23) $y = 3 \cdot 2^x$

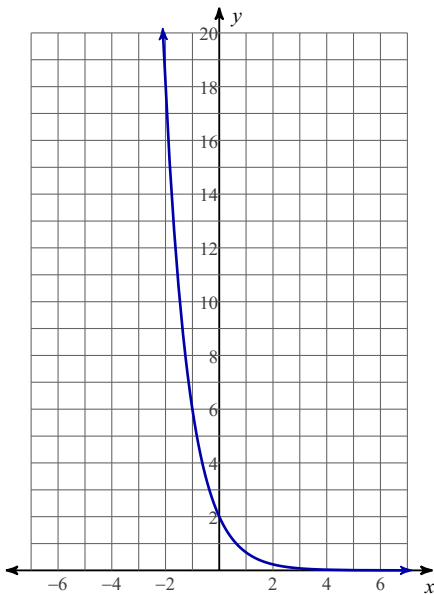


24) $y = 5 \cdot \left(\frac{1}{2}\right)^x$

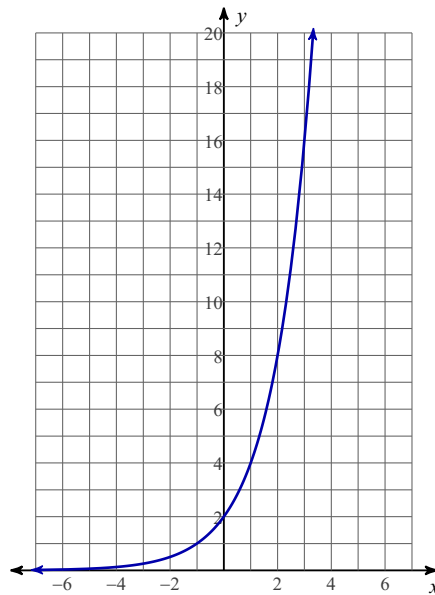


Write an equation for each graph.

25)



26)



27) A house has an infestation of 28 fleas. If left untreated, the fleas are expected to triple each month.

A) Write an equation that could be used to calculate the number of fleas after " m " months.

B) How many fleas would we expect to have after 4 months?

C) If they continued untreated, about how many fleas would there be in a year?

Answers to Exponents and Exponential Growth & Decay Test Review (ID: 1)

1) $8x^{11}$

2) $16a^7$

3) $4m^8$

4) v^4

5) $\frac{2}{p^3}$

6) $2m^2$

7) $6u^6v^2$

8) $6a^4b^3$

9) 1

10) $256a^{16}$

11) $\frac{1}{2mn}$

12) $\frac{u^2v^4}{2}$

13) 8

14) x

15) $81v^8$

16) $\frac{1}{x^{12}}$

17) $\frac{x^2}{2}$

18) n^7

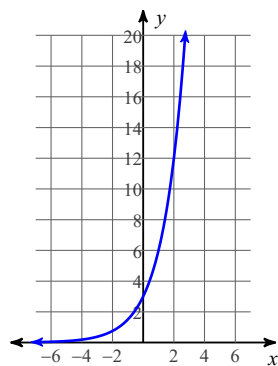
19) $16m^4n^8$

20) $32n^{18}m^3$

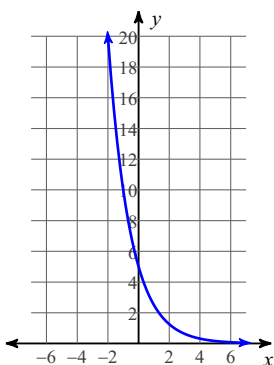
21) $\frac{1}{3y^3x^5}$

22) $\frac{1}{2ba^7}$

23)



24)



25) $y = 2 \cdot \left(\frac{1}{3}\right)^x$

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

27) a) $f = 28 \cdot 3^m$

b) 2268 fleas

c) 14,880,348 fleas