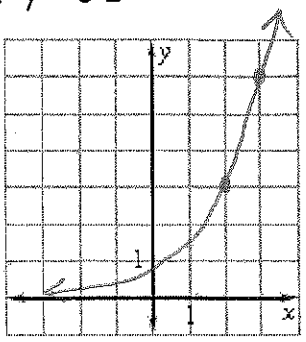
Name KEY Algebra 2 Practice Quiz 7.1 - 7.3

Graph the function. State the domain and range. Identify at least two points.

1. $y = 3 \cdot 2^{x-2}$ (move right 2)



Domain: Real

Range: $y > 0$

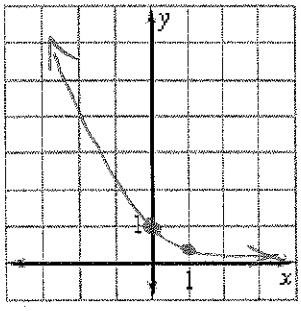
Points:

Parent: $y = 3 \cdot 2^x$

(0,3) → (2,3)

(1,6) → (3,6)

2. $y = (\frac{2}{5})^x$

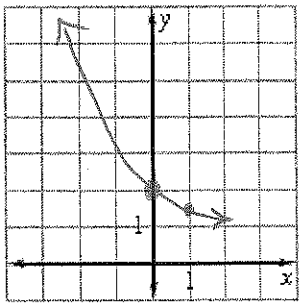


Domain: Real

Range: $y > 0$

Points: (0,1) $(1, \frac{2}{5})$

3. $f(x) = (\frac{3}{5})^x + 1$ (move up 1)



Domain: Real

Range: $y > 1$

Points: Parent: $y = (\frac{3}{5})^x$

$(0,1) \rightarrow (0,2)$

$(1, \frac{3}{5}) \rightarrow (1, 1\frac{3}{5})$

Simplify the expression.

4. $3e^4 \cdot e^3$

$3e^{4+3}$

$3e^7$

5. $(-4e^{3x})^5$

$(-4)^5 (e^{3x})^5$

$-1024 e^{15x}$

6. $\frac{e^{4x}}{5e}$

$\frac{1 e^{4x}}{5 e^1} = \frac{1}{5} e^{4x-1}$

Quotient – Subtract exponents

7. $\frac{8e^{5x}}{6e^{2x}}$

$\frac{4}{3} e^{3x}$

8. From 1997 to 2001, the number n (in millions) of black-and-white TV's sold in the U.S. can be modeled by $n = 26.8(0.85)^t$ where t is the number of years since 1997.

a. Identify the decay factor: 0.85 or

b. Identify the percent decrease: 15%

c. Estimate the number of TV's sold in 1999: 1999 is year 2: $n = 26.8(0.85)^2$

$n = 19.36$ million

9. You deposit \$1300 in an account that pays 4.4% annual interest. Find the balance after 6 years if…

a. The interest is coupounded monthly: $A = P(1 + \frac{r}{n})^{nt}$

$= 1300(1 + \frac{0.044}{12})^{12 \cdot 6} = \$1691.95$

b. The interest is compounded continuously: $A = Pe^{rt} = 1300 e^{0.044 \cdot 6} = \$1692.77$