Review Chapter 7

Simplify each expression. You should have no negative exponents.

1. $(-4x)(-3x^8)$

$12x^9$

2. $6^4 \cdot 6^8$

6^{12}

3. $\left(5x^{\frac{2}{3}}\right)^3$

$5^3 x^2$

$125x^2$

4. $(-2x)(4x)(6x)$

$-48x^3$

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5. $8^0(5^{-2})$

$1\left(\frac{1}{5^2}\right)$

$\frac{1}{25}$

6. $\frac{5}{k^{-3}}$

$5k^3$

7. g^7h^{-3}

$\frac{g^7}{h^3}$

8. $a^{\frac{1}{2}} \cdot a^{-\frac{5}{2}}$ $\frac{4}{2}$

$a^{-2} = \frac{1}{a^2}$

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9. $8x^7(25x^2)^{\frac{1}{2}}$

$8x^7(25^{\frac{1}{2}}x^1)$

$8x^7(5x)$

$40x^8$

10. $(9xy^{-4})^{-\frac{1}{2}}$

$9^{-\frac{1}{2}}x^{-\frac{1}{2}}y^2$

$\frac{y^2}{9^{\frac{1}{2}}x^{\frac{1}{2}}}$

$\frac{y^2}{3x^{\frac{1}{2}}}$

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11. $\frac{x^5y^8}{x^{12}y^3}$

$x^{-7}y^5$

$\frac{y^5}{x^7}$

12. $\frac{3x^{-3}y^5}{x^6} \cdot \frac{5x^1}{9y^2}$

$\frac{15x^{-2}y^5}{9x^6y^2}$

$\frac{5x^{-8}y^3}{3}$

$\frac{5y^3}{3x^8}$

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13. Convert each expression into either radical or exponential form:

a. $\sqrt[3]{z^1}$

$z^{\frac{1}{3}}$

b. $x^{\frac{2}{3}}$

$\sqrt[3]{x^2}$

Apr 14-8:28 AM

Rewrite the following expressions into exponential form and simplify.

14. $\sqrt[3]{64x^2}$

$64^{\frac{1}{3}}x^{\frac{2}{3}}$

$4x^{\frac{2}{3}}$

15. $\sqrt[2]{y^5}$

$y^{\frac{5}{2}}$

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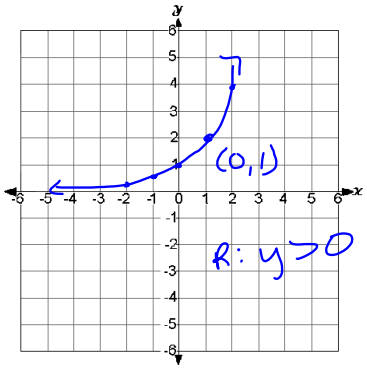
16. Graph the equation $= 2^x$. Label the y-intercept.

x	y
-2	.25
-1	.5
0	1
1	2
2	4



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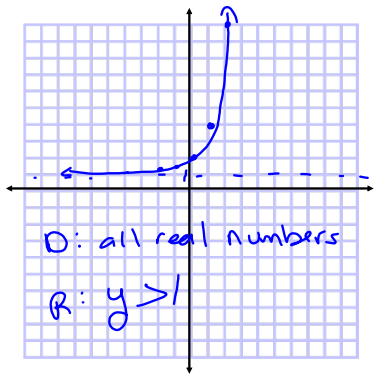
17. Graph. Give the domain and range.

$y = 3^x + 1$

x	y
-2	1.1
-1	1.3
0	2
1	4
2	10



Nov 9-1:37 PM

18. A population of 50 bacteria in a lab culture increases by 50% every hour.

a) Write a function that models this equation.

$a = 50$

$b = 1 + .50 = 1.50$

$y = 50 \cdot (1.5)^x$

b) How many bacteria will there be after 3 hours?

$50(1.5)^3$

168.75 bacteria

Apr 13-12:04 PM

19. The population of a city is 25,000 and decreases 1% each year.

a. Write an equation that models the population based on the number of years from now.

$a = 25000$

$b = 1 - .01 = .99$

$y = 25000(.99)^x$

b. What will the population of the city be in 6 years?

$25000(.99)^6$

23,537 people

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Classwork: **p.489 #1-22 all, 24, 25**
#21,22 on graph paper
2-22 even, 24

Homework: **Study for test**

Apr 13-12:08 PM