

Student Name \_\_\_\_\_  
 Parent Sign \_\_\_\_\_

Algebra  
 Ch. 8 Review

1)  $(4)^{-2} = \frac{1}{4^2} = \frac{1}{16}$  (C)    2)  $7a^{-5}b^3 = \frac{7b^3}{a^5}$  (C)    3)  $\frac{9}{a^{-7}b^6} = \frac{9a^7}{b^6}$  (D)

4)  $12^{-3} \cdot 12^{10} \cdot 12^0 = 12^{-3+10+0} = 12^7$  (D)    5)  $(k^2)^4 = k^{2 \cdot 4} = k^8$  (D)    6)  $(5k^2)^3 = 5^3(k^2)^3 = 125k^6$  (A)    7)  $(-5g^5h^6)^2 (gh^2)^4 = (-5)^2(g^5)^2(h^6)^2 (g^4)^4(h^2)^4 = 25g^{10}h^{12} \cdot g^{16}h^8 = 25g^{26}h^{20}$  (A)

8)  $\frac{x^{14}}{x^7} = x^{14-7} = x^7$  (A)    9)  $\frac{m^{-6}n^{-3}}{m^{-13}n^{-1}} = m^{-6-(-13)}n^{-3-(-1)} = m^{-6+13}n^{-3+1} = m^7n^{-2} = \frac{m^7}{n^2}$  (C)    10)  $(\frac{3x}{2})^4 = \frac{3^4x^4}{2^4} = \frac{81x^4}{16}$  (A)    11)  $4 \cdot 10^{-3} = \underbrace{.004}_{.004}$  (B)

12)  $8(8.8 \times 10^{12}) = (8 \times 8.8) \times 10^{12} = 70.4 \times 10^{12} = 7.04 \times 10^{13}$  (C)    13)  $13.6(5.88 \times 10^{12}) = (13.6 \times 5.88) \times 10^{12} = 79.968 \times 10^{12} = 7.9968 \times 10^{13}$  (C)    14)  $(9 \times 10^7)(7 \times 10^9) = (9 \times 7)(10^7 \times 10^9) = 63 \times 10^{16} = 6.3 \times 10^{17}$  (B)

15)  $(4 \times 10^8)^{-2} = (4)^{-2} \cdot (10^8)^{-2} = 4^{-2} \cdot 10^{-16} = \frac{1}{4^2} \times 10^{-16} = \frac{1}{16} \times 10^{-16} = .0625 \times 10^{-16} = 6.25 \times 10^{-18}$  (B)    16)  $3^{\square} \cdot 3^{-6} = 3^2$   
 $3^8 \cdot 3^{-6} = 3^2$  (C)

17)  $-164, -82, -41, -20.5, \dots$

$\frac{-82}{-164} = .5$

$\frac{-41}{-82} = .5$

$\frac{-20.5}{-41} = .5$

(C)

18)  $3, 9, 27, 81, \dots$

$\times 3 \times 3 \times 3$

$243, 729, 2187$

(B)

19)  $y = 15 \cdot 3^x$

$y = 15 \cdot 3^{-3}$

$y = \frac{15}{3^3} = \frac{15}{27} = \frac{5}{9}$

(C)

20)  $y = a \cdot b^x$  ← period is 6 months  
2 yrs = 4 periods

$y = 250 \cdot 2^4$

$y = 250 \cdot 16$

4000

(A)

21)  $y = \frac{2}{5} \cdot 5^x$

x	$\frac{2}{5} \cdot 5^x$	y
-2	$\frac{2}{5} \cdot 5^{-2}$	.016
-1	$\frac{2}{5} \cdot 5^{-1}$	.08
0	$\frac{2}{5} \cdot 5^0$	.4
1	$\frac{2}{5} \cdot 5^1$	2
2	$\frac{2}{5} \cdot 5^2$	10

(A)

22)  $100\% + 4\% = 104\%$   
1.04

$y = a \cdot b^x$

$y = 2700 \cdot 1.04^x$

$y = 2700 \cdot 1.04^{12}$

$y = 2700 \cdot 1.601032219$

$y = 4322.78699$

4323 people

(C)

23)  $100\% + \frac{2\%}{4}$

$100\% + .5\% = 100.5\%$   
1.005

$y = a \cdot b^x$

$y = 3800 \cdot 1.005^{28}$

$y = 3800 \cdot 1.14987261$

$y = 4369.515918$

\$4369.52

(A)

7 yrs  $\times$  4 times a year  
= 28 periods

24)  $y = a \cdot b^x$

$y = 26 \cdot 5^x$

$y = 26 \cdot 5^2$

$y = 26 \cdot 25$

$y = 650$

half-life

138 days = 1 period

276 days = 2 periods

(A)

25)  $100\% - 10\% = 90\%$   
.90

$y = a \cdot b^x$

$y = 15,500 \cdot .90^5$

$15,500 \cdot .59049$

$9152.595$

\$9152.60

(A)