

Riddle

Algebra 2

Exponential and Logarithmic Functions Test Review

Name _____

Date _____

Simplify each expression. Leave the answer in simplest radical form.

1) $(y^{\sqrt{3}})^{\sqrt{12}}$ y^6

2) $64^{\sqrt{7}} \div 2^{\sqrt{7}}$ $2^{5\sqrt{7}}$

Solve each equation.

3) $3^{n-2} = 27$
 $n = 5$

4) $27^x = 9^{-4x+2}$
 $x = \frac{4}{11}$

5) $(\frac{1}{9})^m = 81^{m+4}$
 $m = -\frac{8}{3}$

Write each equation in logarithmic form.

6) $7^2 = 49$ $\log_7 49 = 2$

7) $2^{-3} = \frac{1}{8}$ $\log_2 \frac{1}{8} = -3$

Write in exponential form.

8) $\log_5 625 = 4$ $5^4 = 625$

9) $\log_4 32 = \frac{5}{2}$ $4^{\frac{5}{2}} = 32$

Find all real solutions of each equation. Round to 3 decimal places whenever necessary.

10) $\log_6 216 = x$ $x = 3$

11) $\log_x 64 = 3$ $x = 4$

12) $\log_3(4x+4) = \log_3 64$ $x = 15$

13) $\log_9 5x = \log_9 6 + \log_9(x-2)$ $x = 12$

14) $\log_4 12 - \log_4 x = \log_4 3$ $x = 4$

15) $3\log_7 4 + 4\log_7 3 = \log_7 x$ $x = 5184$

16) $3^x = 7$ $x = 1.771$

17) $1.3^{x-5} = 13.2$ $x = 14.834$

Graph the following equations:

18) $y = 2^x$

19) $y = \log_2 x$

20) $y = \log_2(x-3)$ R3

21) $y = 2^x + 2$ u2

22) $y = 2^{x-4}$ R4

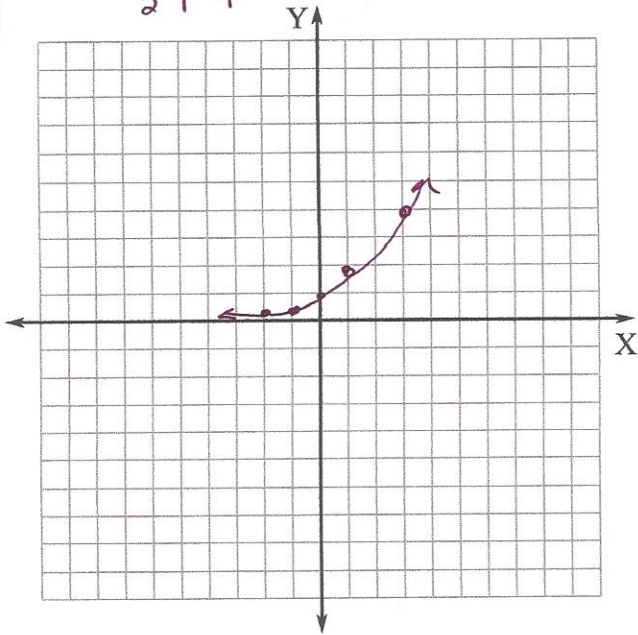
23) $y = \log_2 x + 1$ u1

X	Y
-2	$\frac{1}{4}$
-1	$\frac{1}{2}$
0	1
1	2
2	4

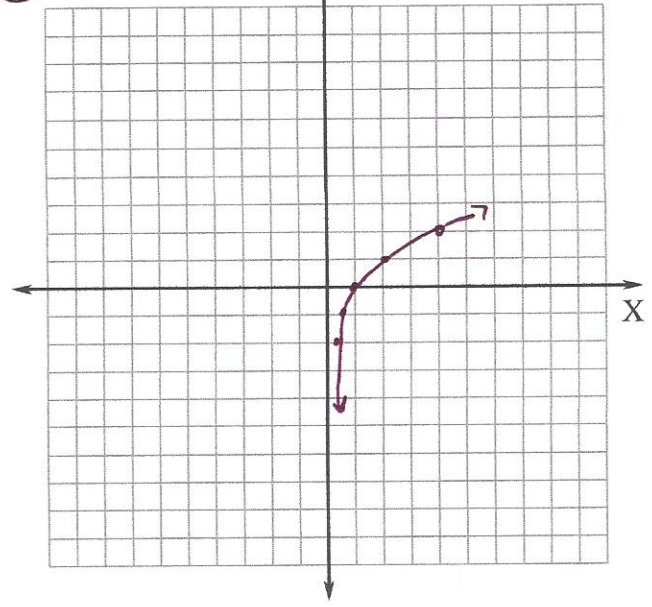
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→

X	Y
$\frac{1}{4}$	-2
$\frac{1}{2}$	-1
1	0
2	1
4	2

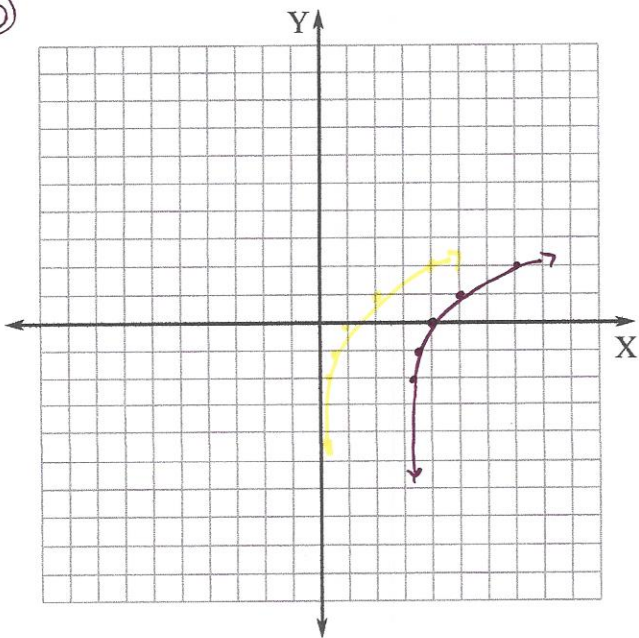
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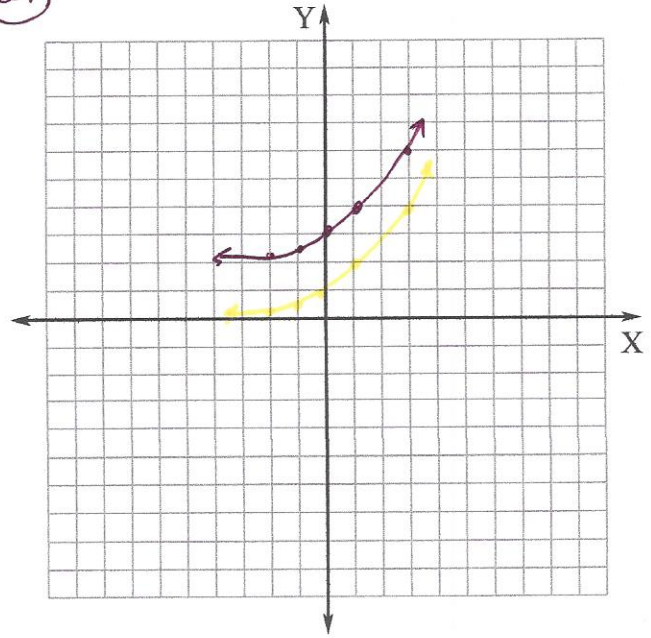
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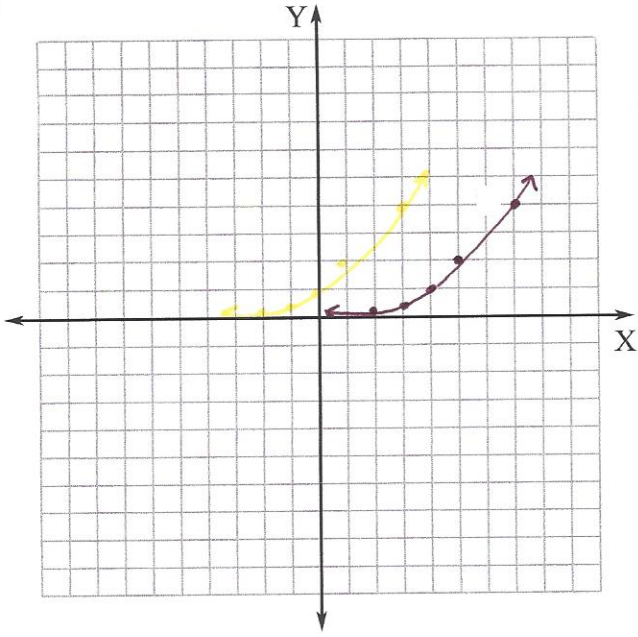
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22)



23)

