

MATH 12 - QUIZ CH 2
EXPONENTS AND LOGS

Name:

NO CALCULATOR OF ANY TYPE ALLOWED - BRAIN ONLY!
EVALUATE EXACTLY. ANSWER IN SIMPLEST FORM

1. $8^{\frac{1}{3}} = \frac{1}{\sqrt[3]{8}} = \frac{1}{2}$	2. $16^{\frac{3}{4}} = (\sqrt[4]{16})^3 = 2^3 = 8$
3. $\left(\frac{4}{9}\right)^{\frac{3}{2}} = \left(\frac{9}{4}\right)^{\frac{3}{2}} = \left(\frac{3}{2}\right)^3 = \frac{27}{8}$	4. $9 \cdot 4^{\frac{1}{2}} = 9 \times 2 = 18$
5. $\log_5 25 = 2$	6. $\log_3 \left(\frac{1}{27}\right) = -3$ $\frac{1}{27} = 3^{-3}$
7. $\log_8 16 = x$ $8^x = 16$ $2^{3x} = 2^4$ $x = \frac{4}{3}$	8. $\log(0.001)$ $\log \frac{1}{1000} = -3$

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SOLVE. GIVE ALL ANSWERS EXACT IN SIMPLEST FORM

9. $\sqrt[3]{x^5} = 8$ $x = 32$	10. $\log_5(x+2) = -1$ $x+2 = 5^{-1} = \frac{1}{5}$ $x = -2 + \frac{1}{5} = -\frac{9}{5} \approx -1\frac{4}{5}$
11. $\log_x 8 = \frac{1}{2}$ $x^{\frac{1}{2}} = 8$ $x = 64$	12. $9^x = 27$ $3^{2x} = 3^3$ $2x = 3$ $x = \frac{3}{2}$

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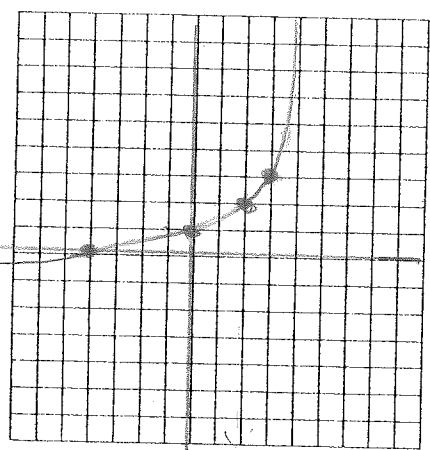
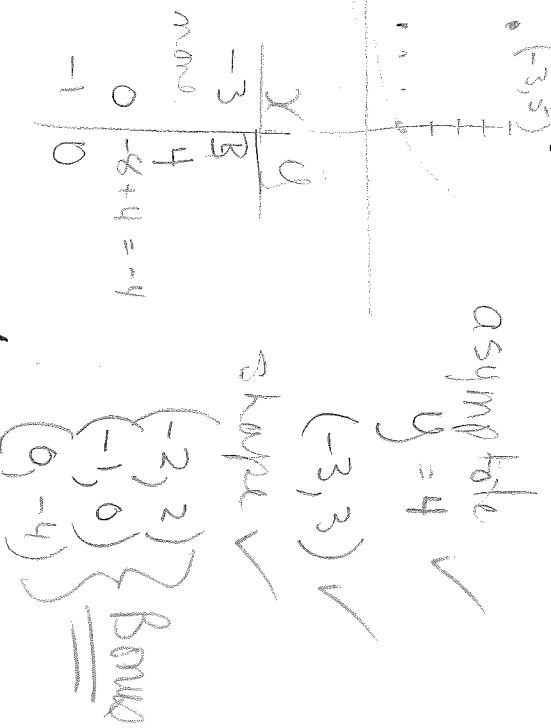
13. $\log p + \log 5 = \frac{1}{2} \log 9$

$5p = 9^{\frac{1}{2}} = 3$

$p = \frac{3}{5}$

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14. Draw a careful graph of the function: $f(x) = -2(x+3) + 4$ and give the equation of the asymptote.



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