

PRE-AP ALGEBRA 2

2B.4 CLASSWORK

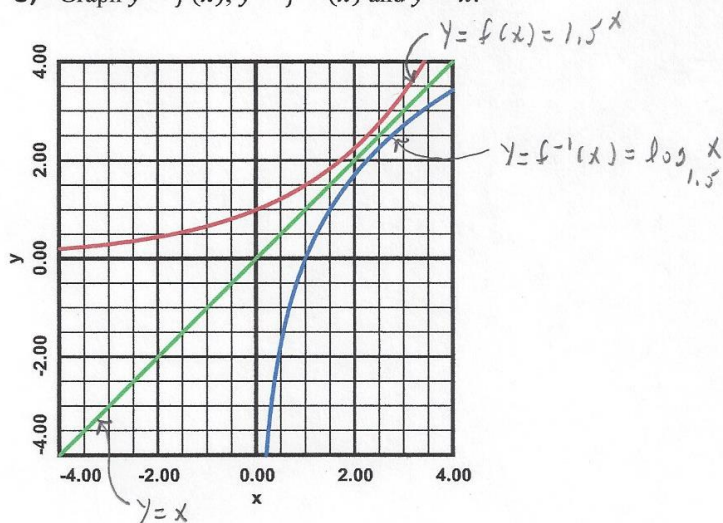
- 1) a) For $y = f(x) = 1.5^x$, fill in the table.

| x | $y = f(x) = 1.5^x$ |
|-----|------------------------|
| -2 | $0.4 = \frac{4}{10}$ |
| -1 | $0.6 = \frac{2}{3}$ |
| 0 | 1 |
| 1 | $1.5 = 1\frac{1}{2}$ |
| 2 | $2.25 = 2\frac{1}{4}$ |
| 3 | $3.375 = 3\frac{3}{8}$ |

- b) Switch x and y in the table in part a.

| x | $y = f^{-1}(x) = \log_{1.5} x$ |
|----------------|--------------------------------|
| $\frac{4}{10}$ | -2 |
| $\frac{2}{3}$ | -1 |
| 1 | 0 |
| $1\frac{1}{2}$ | 1 |
| $2\frac{1}{4}$ | 2 |
| $3\frac{3}{8}$ | 3 |

- c) Graph $y = f(x)$, $y = f^{-1}(x)$ and $y = x$.



- 3) Convert the logarithmic equations to exponential form.

a) $x = \log_7 343$

b) $x = \log_6 216$

a) $7^x = 7^{\log_7 343}$, $7^x = 343$

b) $6^x = 6^{\log_6 216}$, $6^x = 216$

- 4) Use the Inverse Function Properties to solve the equations for x .

a) $\log_3 x = 4$

b) $\log_x 8 = 3$

a) $3^{\log_3 x} = 3^4$, $x = 3^4 = 81$

b) $x^{\log_x 8} = x^3$, $x^3 = 8$, $x = 2$

- 2) Convert the exponential equations to logarithmic form.

a) $2^x = 256$

b) $5^x = 125$

a) $\log_2 2^x = \log_2 256$, $x = \log_2 256$

b) $\log_5 5^x = \log_5 125$, $x = \log_5 125$