

PRECALC WORKSHEET

Let $f(x) = 2^x$, $g(x) = \sin(\pi x)$, $h(x) = \frac{1}{2x-1}$, and $k(x) = \log_2(x)$.

Evaluate

- $f(3)$
- $h(1)$
- $k(1)$
- $(f \circ k)(4)$
- $(h \circ g)(x)$
- $f^{-1}(4)$
- $h^{-1}(3)$

Solve:

- $h(x) = 2$
- $g(x) = 0$
- $k(x) = 4$
- $\frac{([g(x)]^2 + \cos^2(\pi x))\sqrt{2x+1}}{2x-2} = 0$
- $x^2 - x - 1 = 0$

Factor:

- $x^2 + 3x - 40$
- $x^3 - 1$
- $x^2 e^x - e^x$

Simplify:

- $\frac{3}{2} + \frac{5}{3}$

- $\frac{2x-1}{x^2} + \frac{x}{x^3}$

- $\frac{2^{2x}(x^2-1)}{2^x(x-1)}$

- $\frac{(x+h)^2 - x^2}{h}$

- $\frac{(x+h)^3 - x^3}{h}$

Find the slope between:

- (3, 2) and (7, 12)
- (1, 1) and (4, 4)
- (0, -4) and (-1, 12)
- (-10, 5) and (3, 0)
- (2, 0) and (3, 0)

Find the equation for the line:

- with slope $\frac{1}{2}$ and y -intercept 2
- with slope $-\frac{3}{2}$ and passing through (4, 3)
- passing through (3, 2) and (7, 12)

Graph:

- $f(x) = \log_2(x)$
- $f(x) = 5x + 2$
- $f(x) = (x-1)^2 + 2$
- $\sin(2x)$