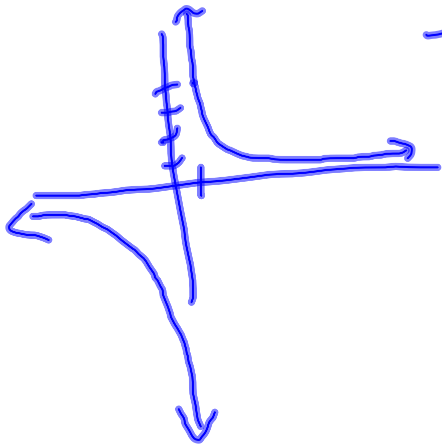
4. $y = \frac{4}{x}$

Inverse

x	y
0	—
1	4
2	2



24. $(-3,3)$ $(8,6)$ $(t,-1)$

$$\frac{y_1-y_2}{x_1-x_2}$$

$$\frac{3+1}{-3-t} = \frac{3-6}{-3-8}$$

$$\frac{4}{-3-t} = \frac{-3}{-11}$$

$$-44 = 9 + 3t$$

$$-9 \qquad -9$$

$$\frac{-53}{3} = \frac{3t}{3}$$

$$t = \frac{-53}{3}$$

30c

(1,3) (2,4)

$$m = \frac{3-4}{1-2} = \frac{-1}{-1} = 1$$

$$3 = 1(1) + b$$
$$-1 \quad -1$$

$$y = x + 2$$

37b. $f(x) = \frac{1}{x}$ 1

$$\frac{f(1+\Delta x) - f(1)}{\Delta x}$$

$$\frac{\frac{1}{1+\Delta x} - \frac{1}{1}}{\Delta x} = \frac{\frac{1-(1+\Delta x)}{1+\Delta x}}{\Delta x}$$

$$\frac{1-1-\Delta x}{\Delta x(1+\Delta x)} = \frac{-\cancel{\Delta x}}{\cancel{\Delta x}(1+\Delta x)}$$

$$= \frac{-1}{1+\Delta x} \quad \Delta x \neq 0, -1$$

Trig Review

Pythagoran Identities:

① $\sin^2\theta + \cos^2\theta = 1$

② $1 + \cot^2\theta = \csc^2\theta$

③ $\tan^2\theta + 1 = \sec^2\theta$

Double-Angle Formulas

① $\sin 2u = 2\sin u\cos u$

② $\cos 2u = \cos^2 u - \sin^2 u$
$= 2\cos^2 u - 1$
$= 1 - 2\sin^2 u$

Radians to degrees: $\cdot \dfrac{180}{\pi}$

degrees to Radians: $\cdot \dfrac{\pi}{180}$

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① $\dfrac{\sin^2\theta}{\sin^2\theta} + \dfrac{\cos^2\theta}{\sin^2\theta} = \dfrac{1}{\sin^2\theta}$ $\longrightarrow$ $\sin^2\theta = 1 - \cos^2\theta$

$\cos^2\theta = 1 - \sin^2\theta$

$1 + \cot^2\theta = \csc^2\theta$

$\tan^2\theta + 1 = \sec^2\theta$

② $\cos 2u = \cos^2 u - \sin^2 u$
$= \cos^2 u - (1 - \cos^2 u)$
$= 2\cos^2 u - 1$

Special Triangles