

1.2 # 13

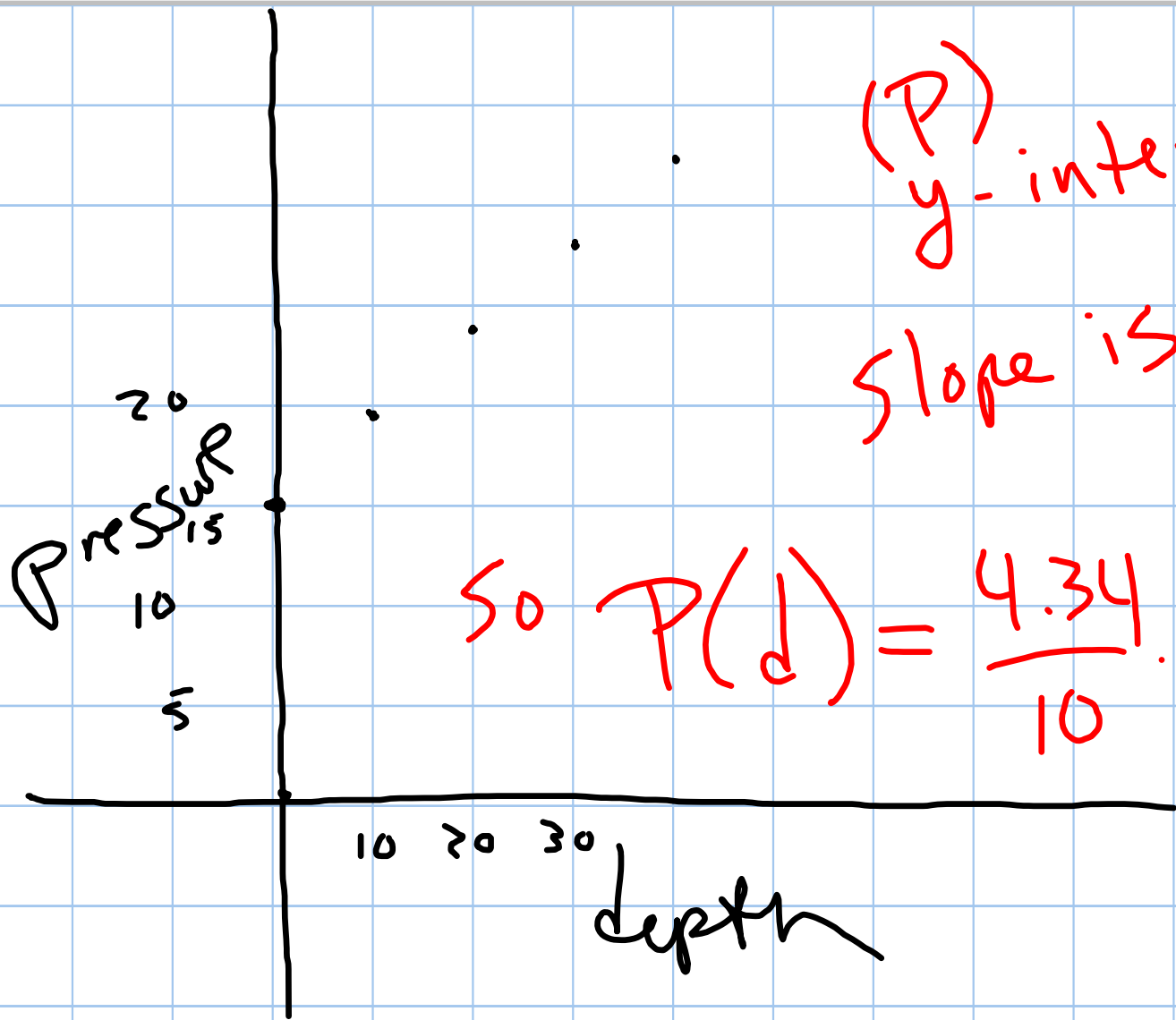
$P(d)$ = pressure where d = depth
below surface

Know

$$P(0) = 15$$

$$P(10) = 15 + 4.34 = 19.34$$

2 pts on a line: $(0, 15)$
and $(10, 19.34)$



(P)
y-intercept is 15
slope is $\frac{4.34}{10}$

So $P(d) = \frac{4.34}{10} \cdot d + 15$

1.3 # 12

$$y = x^2 - 4x + 3$$

basic function

$$y = x^2$$

mess with

$$y = a(bx + c)^2 + d$$

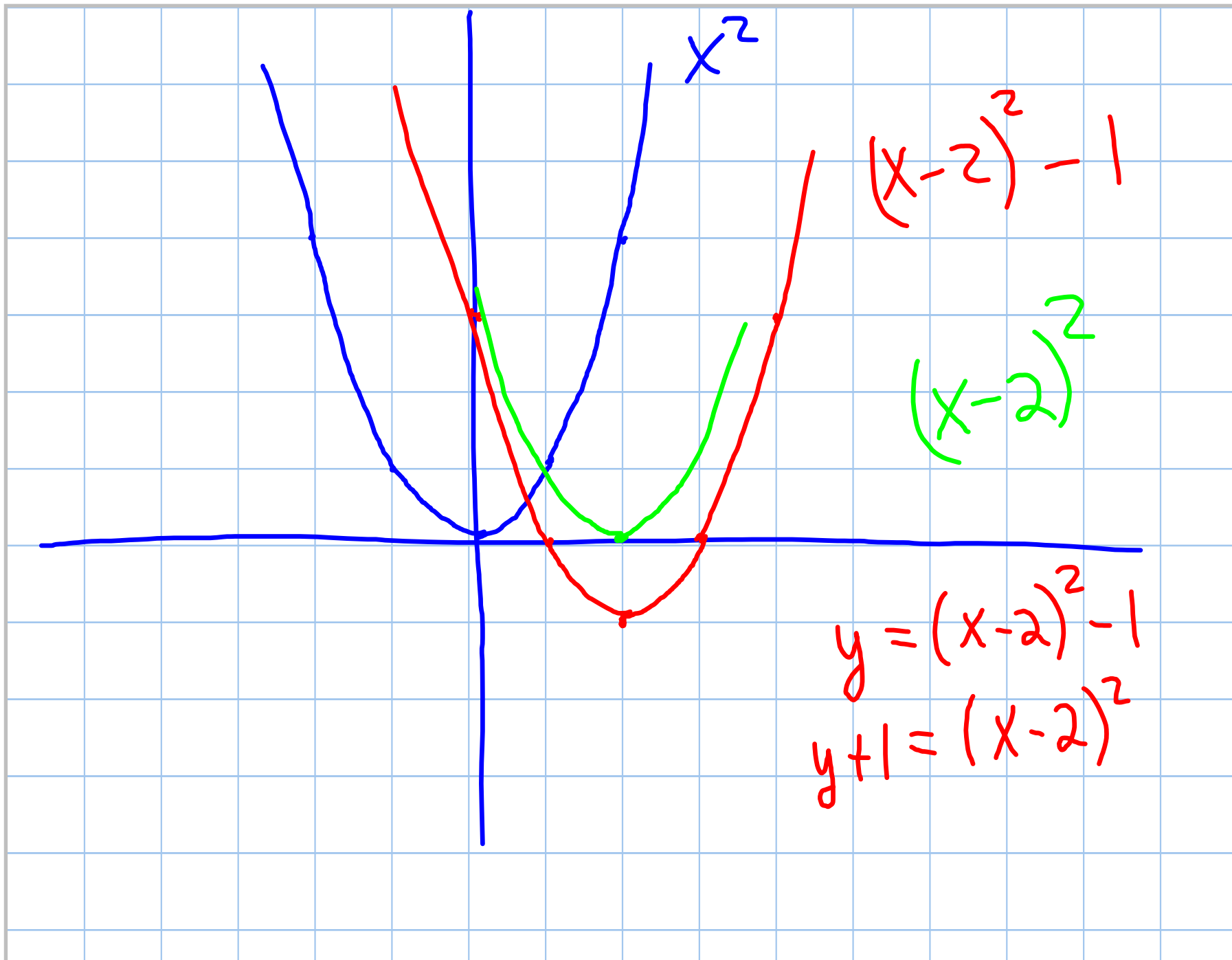
$$y = x^2 - 4x + 3$$

$$y = x^2 - 4x + \left(\frac{-4}{2}\right)^2 - \left(\frac{-4}{2}\right)^2 + 3$$

$$y = (x - 2)^2 - 4 + 3$$

$$y = (x - 2)^2 - 1$$

↑ +2 ↓ down 1

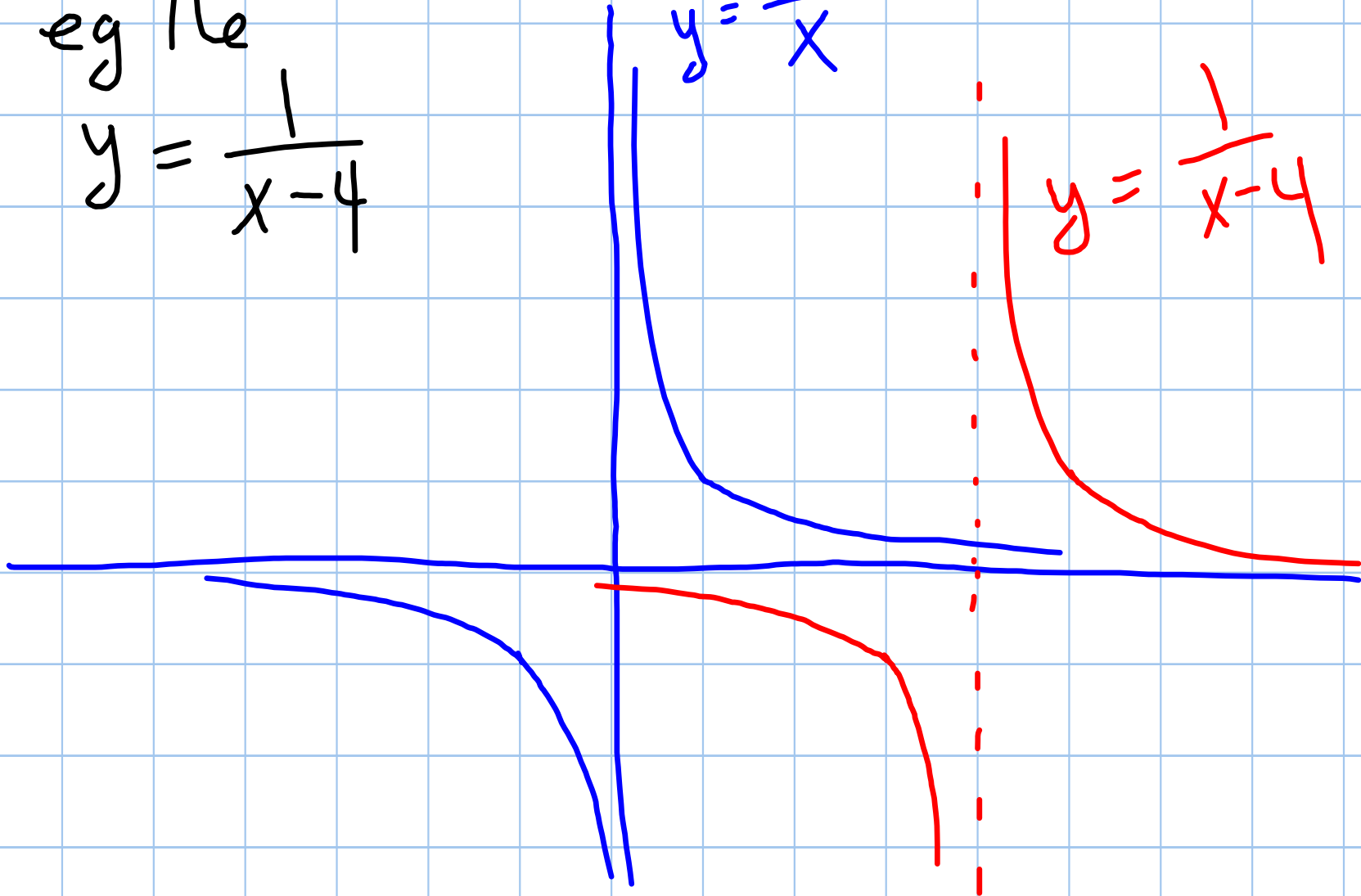


eg 1/e

$$y = \frac{1}{x-4}$$

$$y = \frac{1}{x}$$

$$y = \frac{1}{x-4}$$

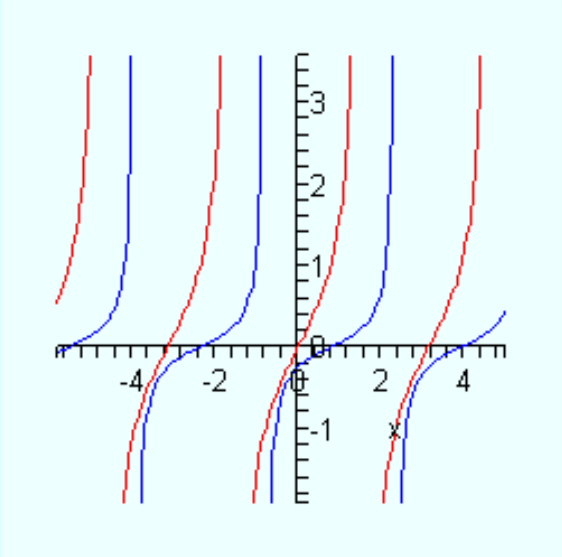


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$$y = \frac{1}{4} \tan\left(x - \frac{\pi}{4}\right)$$

Precalculus - Standard Functions and Transformations

File Help



Define Function

f(x) =

a*f(b*x+c)+d =

a = b =

c = d =

Display Color Close

Maple Command

```
plots[display]( [plot(tan(x), x = -5.78 .. 5.00, view = [-5.78 .. 5.00, -1.91 .. 3.58], 'discont' = true ), plot( 1/4*tan(x-1/4*Pi), x = -5.78 .. 5.00, y = -1.91 .. 3.58, 'discont' = true)]);
```

eg #36

$$f(x) = 1 - x^3$$

$$g(x) = \frac{1}{x}$$

$$f \circ g = f(g(x))$$

$$= f\left(\frac{1}{x}\right) = 1 - \left(\frac{1}{x}\right)^3 = 1 - \frac{1}{x^3}$$

$$g \circ f = g(f(x))$$

$$g(1 - x^3) = \frac{1}{1 - x^3}$$

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$$f(x) = \frac{2}{x+1}, \quad g(x) = \cos x, \quad h(x) = \sqrt{x+3}$$

$$f \circ g \circ h = f(g(h(x)))$$

$$f(g(\sqrt{x+3})) = f(\cos(\sqrt{x+3}))$$
$$= \frac{2}{\cos(\sqrt{x+3}) + 1}$$

