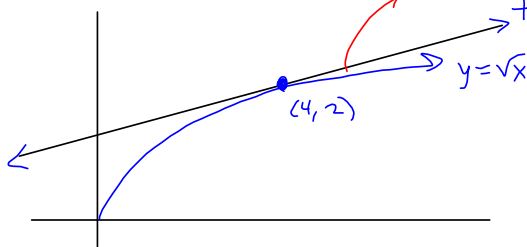


Questions about Exercises? $(a-b)(a+b) = a^2 - b^2$

$$\left(\frac{\sqrt{4+h} - 2}{h} \right) \left(\frac{\sqrt{4+h} + 2}{\sqrt{4+h} + 2} \right) = \frac{4+h-4}{h(\sqrt{4+h}+2)} = \frac{h}{h(\sqrt{4+h}+2)}$$

$$= \frac{1}{\sqrt{4+h}+2} \xrightarrow{h \rightarrow 0} \frac{1}{\sqrt{4}+2} = \frac{1}{2+2} = \frac{1}{4} = \text{slope of}$$

\sqrt{x} @ $x=4$.



tangent line of slope
 $m = \frac{1}{4}$ thru the
 point $(4, \sqrt{4}) = (4, 2)$.

$$y = m(x - x_1) + y_1$$

$$= f'(x_1)(x - x_1) + f(x_1)$$

$$= \frac{1}{4}(x-4) + \sqrt{4}$$

$$= \frac{1}{4}(x-4) + 2 \text{ for me!}$$

$$= \frac{1}{4}x - 1 + 2 \quad \boxed{\frac{1}{4}x + 1 = y}$$

webAssign
 answers.

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

Your Questions can determine our discussion in lecture.

$$(x+y)^2 = x^2 + 2xy + y^2$$

$$(x+y)^3 = x^3 + 3x^2y + 3xy^2 + y^3$$

$$(x+y)^5 = x^5 + 5x^4y + 10x^3y^2 + 10x^2y^3 + 5xy^4 + y^5$$

$$\begin{array}{ccccccc} & & & & 1 & & & & \\ & & & & & 1 & & & \\ & & & 1 & & 2 & & 1 & \\ & & 1 & & 3 & & 3 & & 1 \\ & 1 & & 4 & & 6 & & 4 & & 1 \\ 1 & & 5 & & 10 & & 10 & & 5 & & 1 \end{array}$$

Carlos knows
Pascal's Triangle.

Does he know
Pascal's Wager?

Sl. 1 # 16 WebAssign, #26 in Videos
Enik got me, good.

Lexicon for written answers to applied problems.

Let $V =$ volume of ^{spherical} balloon (in^3) as a function of

$r =$ radius of " (in).

Then $V = V(r) = \frac{4}{3}\pi r^3$, and

$V(r+4) - V(r) = \frac{4}{3}\pi [r+4]^3 - \frac{4}{3}\pi [r]^3$ is the volume of air added to make the radius increase by 4 inches.

This gives

$$\frac{4}{3}\pi [r^3 + 3r^2(4) + 3r(4)^2 + 4^3] - \frac{4}{3}\pi r^3$$

$$= \frac{4}{3}\pi [12r^2 + 48r + 64]$$

Preview of §1.4 Tedium.

convince yourself that $\lim_{h \rightarrow 0} \frac{(x+h)^2 - x^2}{h} = 2x$ @ $x=3$
 $= 6$
using smaller and smaller values of h

