has to limit the cost of development and production to $276 per surfboard. He has already spent $58,760 on equipment for the boards. The oduction costs are $146 per board. The cost per board is $\frac{146x + 58{,}760}{x}$ dollars. Determine the number of boards that must be sold to limit the final 76.

ust be sold to limit the cost per board to $276?

Not sure about this one. I *think* that most of the numbers here are just showing you what went into the cost-per-board function. Our focus is just on the cost per board. With the tools we have, our best bet might be just to build a table. We basically want that function to be less than $276.

$$\frac{146x + 58760}{x} = (276)\left(\frac{x}{x}\right) = \frac{276x}{x}$$

$$146x + 58760 = 276x$$

etc.

Section 1.2 in Earnest

Solve

$Cx + Gy = K$, for x.

$Cx = K - Gy$

$x = \frac{K - Gy}{C}$

Solve for m.

$G = \frac{1}{7} p(m - q)$

$\frac{7G}{7} = \frac{p(m-q)}{7}$

$7G = pm - pq$

$pm - pq = 7G$

$pm = 7G + pq$

$m = \frac{7G + pq}{p}$

$\frac{5}{5} = \frac{3x}{5}$ Newp

$3x = 5$

$x = \frac{5}{3}$ Yep

http://en.wikipedia.org/wiki/How_to_Solve_It

§ 1.2 Problem-Solving / Modeling
Word Problems.

What is the simple interest rate if $134.49 in interest is earned on a deposit of $1925.01 in one year?

Simple Interest

$I = Prt$

I = interest rate

P = Principal (in $)

t = Time (in yrs)

t = 1 for this prob.

$134.49 = (1925.01)r(1)$

$\frac{134.49}{1925.01} = r$

```
(1.28+.04*3.82)/
.04
              35.82
134.49/1925.01
      .0698645721
```

This says $r \approx .0698$

$= 6.98\%$

Cameron and his friend John bought a used circus carousel for $69,733, including sales tax. If the sales tax rate is 7%, then what was the cost of the carousel before the tax?

$64,851.69 is the guess.

Check:

$64,851.69 + (64,851.69)(.07) = 69,733$ Want

$\approx$

```
.04
              35.82
134.49/1925.01
      .0698645721
64851.69+64851.6
9*.07
        69391.3083
```

$69,733 - (.07)(69,733)$

New p.

$64851.69 + (64,851.69)(.07) = 69,733$ Want

$x + (x)(.07) = 69,733$

$x + .07x = 69733$

Key to getting the right equation was checking the 1st (bad) guess

$1.07x = 69733$

$x = \frac{69733}{1.07}$

$x \approx 65,171.02$

$65171.02 + (65171.02)(.07)$

$= (1.07)(65171.02)$

$x + 2x = 3x$

$1x + 2x = x(1+2) = 3$

$1x + .07x =$

```
64851.69+64851.6
9*.07
        69391.3083
65171.02*.07
         4561.9714
65171.02*1.07
        69732.9914
```

Pretty close.

Writeup: Let x = price before tax (in $)

Then $x + .07x = 69733$ 5/10

Aug 24-9:40 AM

You invested $15,000 in two accounts paying 3% and 7% annual interest, respectively. If the total interest earned for the year was $570, how much was invested at each rate?

Make a guess

7500 in each account

$7500 + 7500 = 15000$ ✓

$(7500)(.03) + (7500)(.07) = 570$ want

Doesn't work

$x + y = 15000$

$.03x + .07y = 570$

Let x = amt invested @ 3% (in $)

& y = " " " 7% (in $)

$x + y = 15000 \Rightarrow y = 15000 - x$

$.03x + .07y = 570$

$.03x + .07(15000 - x) = 570$

$.03x + .07(15000) - .07x = 570$

$-.04x + .07(15000) = 570$

$-.04x = 570 - .07(15000)$

$x = \dfrac{570 - .07(15000)}{-.04}$

```
(570-.07*15000)/
-.04
              12000
```

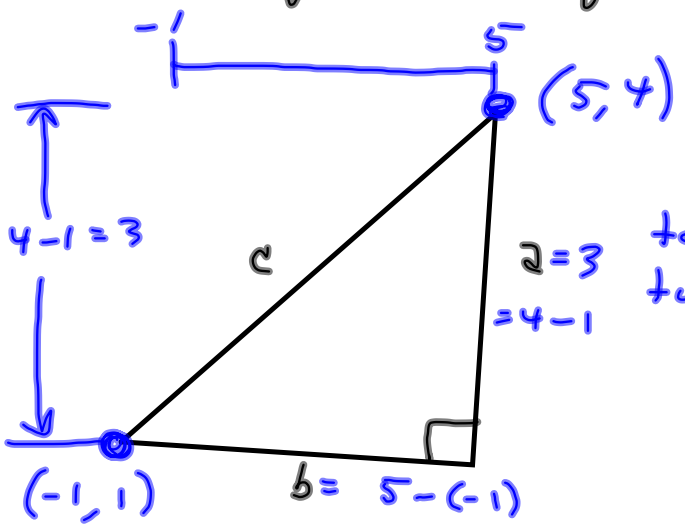
$x = 12000 \Rightarrow$

$y = 15000 - 12000 = 3000 = y$

§1.2 Done, but for questions

§1.3

Pythagorus Says $a^2+b^2=c^2$



What's the distance between the two points?

$c^2 = a^2 + b^2$

$c^2 = (4-1)^2 + (5-(-1))^2$

$c = |c| = \sqrt{c^2} = \sqrt{(4-1)^2 + (5-(-1))^2}$

Distance from (x_1, y_1) to (x_2, y_2) is

$d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$