WORD PROBLEMS - From Notes pg 3 Slide #6.

Lift passes.

$4t + 34s = 428$ → 4 teachers and 34 students cost $428 to ski.

$3t + 29s = 356$ → 3 teachers and 29 students cost $356 to ski.

WE WANT TO KNOW HOW MUCH EACH STUDENT AND EACH TEACHER PASS COST.

1. Solve for either "t" or "s" in both equations.

$4t + 34s = 428$

$\frac{34s}{34} = \frac{428 - 4t}{34}$

$s = \left(\frac{428}{34}\right) - \left(\frac{4}{34}\right)t$

$3t + 29s = 356$ *Solved for t in Notes

$\frac{29s}{29} = \frac{356 - 3t}{29}$ *t is easier fractions to deal with.

$s = \left(\frac{356}{29}\right) - \left(\frac{3}{29}\right)t$

2. Graph equations in slope-intercept form. Write down what each variable means.

$y_1 = \left(\frac{428}{34}\right) - \left(\frac{4}{34}\right)x$

$y_2 = \left(\frac{356}{29}\right) - \left(\frac{3}{29}\right)t$

s = rate for student = y

t = rate for teacher = x

3. Find the intersection point. *may need to adjust windows so intersection is visible on screen.

[2nd] [Trace] [5] intersect [ENTER] [ENTER] [ENTER]

Intersection: x = 22 y = 10

4. Go back to step 2 to determine what "x" and "y" mean for this case.

s = student rate = y = 10

t = teacher rate = x = 22

5. Verify your solution

$4t + 34s = 428$

$4(22) + 34(10) = 428$ ✓

$3t + 29s = 356$

$3(22) + 29(10) = 356$ ✓

6. Answer question fully.

The student rate is $10 and the teacher rate is $22.