Finals Day

1. Unit 4 Test: Radicals, Special Rights, and The Unit Circle (8 pts)
    *Opportunity to improve Quiz 4.1 score
2. Semester 1 Final Exam (8 pts)
    *32 questions Multiple Choice
    (8 from each unit)

*Unit 1 Linear
*Unit 2 Vector
*Unit 3 Similarity & Trigonometry
*Unit 4 Radicals, Special Rights, The Unit Circle, and Trigonometric Functions

Final's schedule:

FIRST SEMESTER / SECOND QUARTER FINALS
2017-18
SPECIAL Bell Schedule

Tuesday, January 23, 2018

- Four Period day.
- Lunch with period 3 teacher.
- One hour, 25 minute classes

Period 1: Study Hall	8:05-9:30
Period 2	9:40-11:05
Period 3	11:15-1:10*
**Lunch to be determined*	
Period 4	1:20-2:45

Wednesday, January 24, 2018

- Four Period day.
- Lunch with period 6 teacher.
- One hour, 25 minute classes

Period 1: Finals	8:05-9:30
Period 5	9:40-11:05
Period 6	11:15-1:10*
**Lunch to be determined*	
Period 7	1:20-2:45

Final's schedule:

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Period 4	1:20-2:45

Do you plan to study in W124 during 1st hour study hall on Tuesday??

Tuesday January 23, 2018
1st hour Study hall

_____
Student Name

Go to Paulson, W124

_____
(1st hour teacher name)

_____
(1st hour teacher signature)

Remember to get a pass on Monday.

Class Plan:

Warm-up Unit 3 (Questions??)

Warm-up Unit 2

Warm-up Unit 1

Study & Work Together!

$$\frac{\sin(\text{gerine})}{\cos(\text{gerine})} =$$

Warm-up: Vectors (coordinate geo)

(graph paper)

$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} x \text{ component} \\ y \text{ comp} \end{pmatrix}$

Find the length of:

a right 2, up 1: $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$ **b** right 5, down 4: $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$

$\sqrt{1^2+2^2} = \sqrt{5}$

$5^2+(-4)^2 = d^2$

$25+16 = d^2$

$41 = d^2$

$\sqrt{41} = d$

Warm-up: Linear

Solve each system by elimination.

1) $-2x + 2y = 4$

$-12x - 6y = 24$

A) $(0, 2)$

B) $(-2, 0)$

C) $(0, -2)$

D) $(2, 0)$

$-2(-2) + 0 = 4$

$4 = 4$ ✓

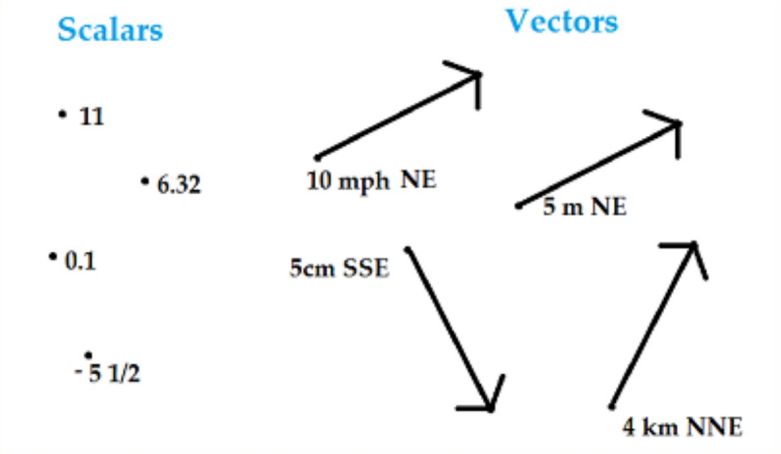
$-12(-2) = 24$

$24 = 24$ ✓

Introduction to Vectors

A vector is a quantity that has both **size** *and* **direction**.

We often represent a vector as an arrow.



Speed vs. Velocity

A Direction: VECTOR REPRESENTATION

Component Form

$$\overrightarrow{a} = \begin{pmatrix} x \\ y \end{pmatrix}$$

Horizontal Movement

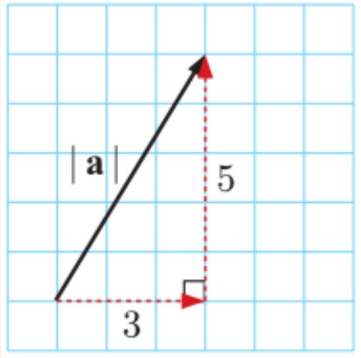
Vertical Movement

$\mathbf{a}$

B Size THE LENGTH OF A VECTOR

The magnitude of a vector is its "length".

"Magnitude of vector *a*" is written as: $|\vec{a}|$



$$|\mathbf{a}|^2 = 3^2 + 5^2 \qquad \{\text{Pythagoras}\}$$

$$\therefore \quad |\mathbf{a}| = \sqrt{3^2 + 5^2} \qquad \{\text{as} \quad |\mathbf{a}| > 0\}$$

$$= \sqrt{34} \text{ units}$$

Orthogonal Vectors

Orthogonal Vectors

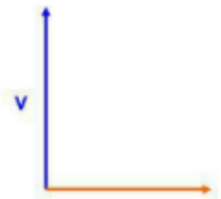
The vectors **u** and **v** are **orthogonal** if **u** · **v** = 0

$\vec{u} = \begin{pmatrix} a \\ b \end{pmatrix} \quad \vec{v} = \begin{pmatrix} c \\ d \end{pmatrix}$

Note: Orthogonal is the term for Vectors who have a 90 degree angle between them.

Dot Product

$\vec{u} \cdot \vec{v} = (a \cdot c) + (b \cdot d) = 0$



Then $\vec{u} \perp \vec{v}$

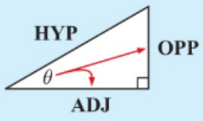
*Unit 3 Similarity and Trigonometry

Chapter 13 - Trigonometry

These ratios have the traditional names **sine**, **cosine**, and **tangent** respectively. We abbreviate them to **sin**, **cos**, and **tan**.

In any right angled triangle with one angle θ, we have:

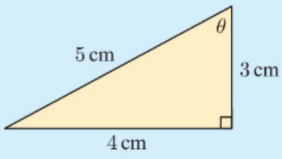
$$\sin\theta = \frac{\text{OPP}}{\text{HYP}}, \quad \cos\theta = \frac{\text{ADJ}}{\text{HYP}}, \quad \tan\theta = \frac{\text{OPP}}{\text{ADJ}}$$

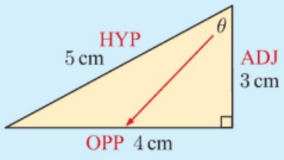


SOH CAH TOA

Example 2 **Self Tutor**

For the given triangle, find $\sin\theta$, $\cos\theta$, and $\tan\theta$.





$$\sin\theta = \frac{\text{OPP}}{\text{HYP}} = \frac{4}{5}$$

$$\cos\theta = \frac{\text{ADJ}}{\text{HYP}} = \frac{3}{5}$$

$$\tan\theta = \frac{\text{OPP}}{\text{ADJ}} = \frac{4}{3}$$

System of Equations:

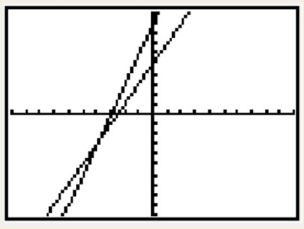
2 equations with 2 variables.

$$y = 2x + 5$$

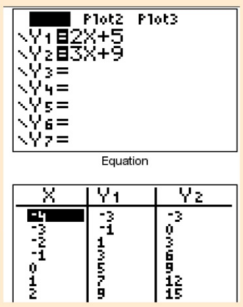
$$y = 3x + 9$$

Methods of Solving Systems:

GRAPH



TABLE



SYMBOLIC MANIPULATION

1) Substitution
2) Elimination
3) Matrices

Exercises... Review for Finals

You can do it!!!

Please organize your workspace...