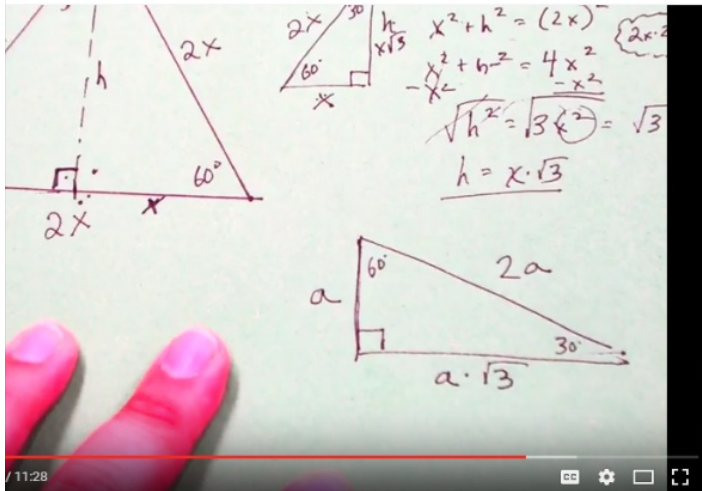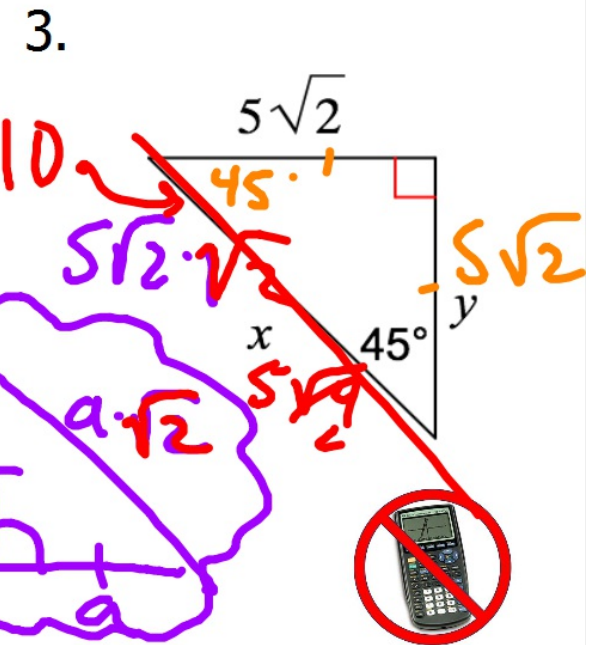Good afternoon: warm up in notebooks
Find the values of x and y in each.

1.

$60°$ x 18

9

$9 \cdot \sqrt{3}$ y

2.

$\sqrt{3}$ 6 $2a$

y x

$30°$

$3\sqrt{3}$

$a\sqrt{3}$

$2x$ $2x$ $x^2 + h^2 = (2x)^2$
30 h
$x\sqrt{3}$ $x^2 + h^2 = 4x^2$
$60°$ $-x^2$ $-x^2$
x $\sqrt{h^2} = \sqrt{3(x^2)} = \sqrt{3}$
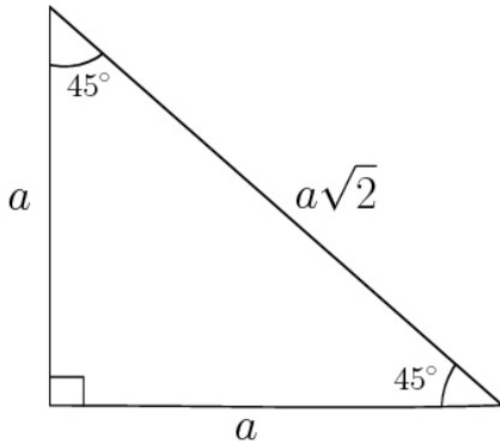$h = x \cdot \sqrt{3}$

$60°$ $2a$
a
$30°$
$a \cdot \sqrt{3}$

3.

$5\sqrt{2}$

10 $45°$

$5\sqrt{2} \cdot \sqrt{2}$ $5\sqrt{2}$

x $45°$ y

$a\sqrt{2}$ $\frac{5\sqrt{2}}{2}$
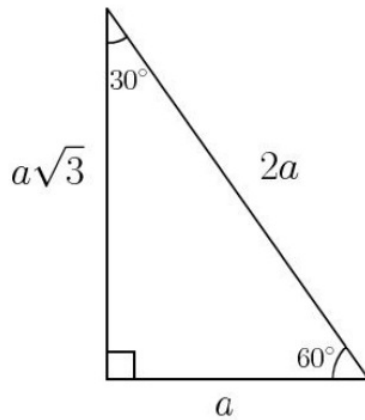
a

a
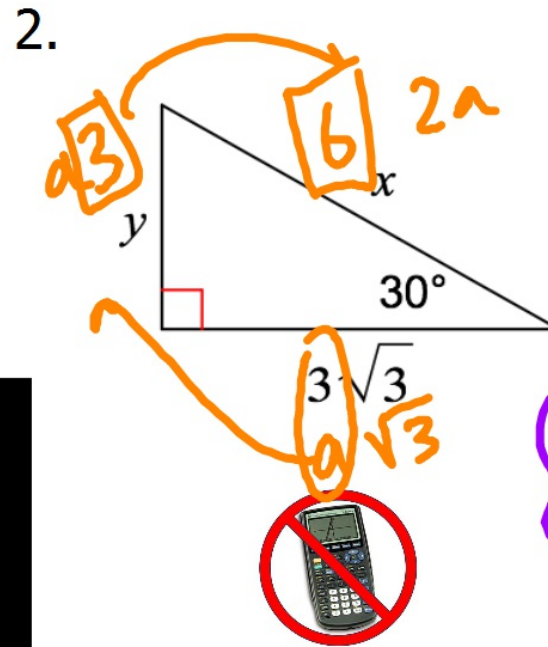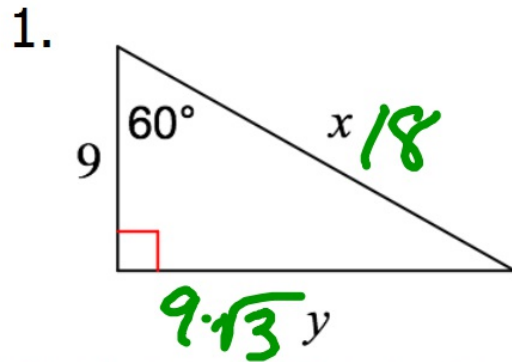
...sess in DS (today is bad, Th is good)
...omorrow after school

/ 11:28

Assessments
- look over what you missed...find a local expert at your table and learn from any mistakes :)

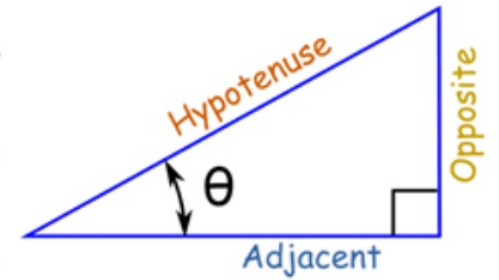- HW needed: completed trig worksheet, notes from trig intro video
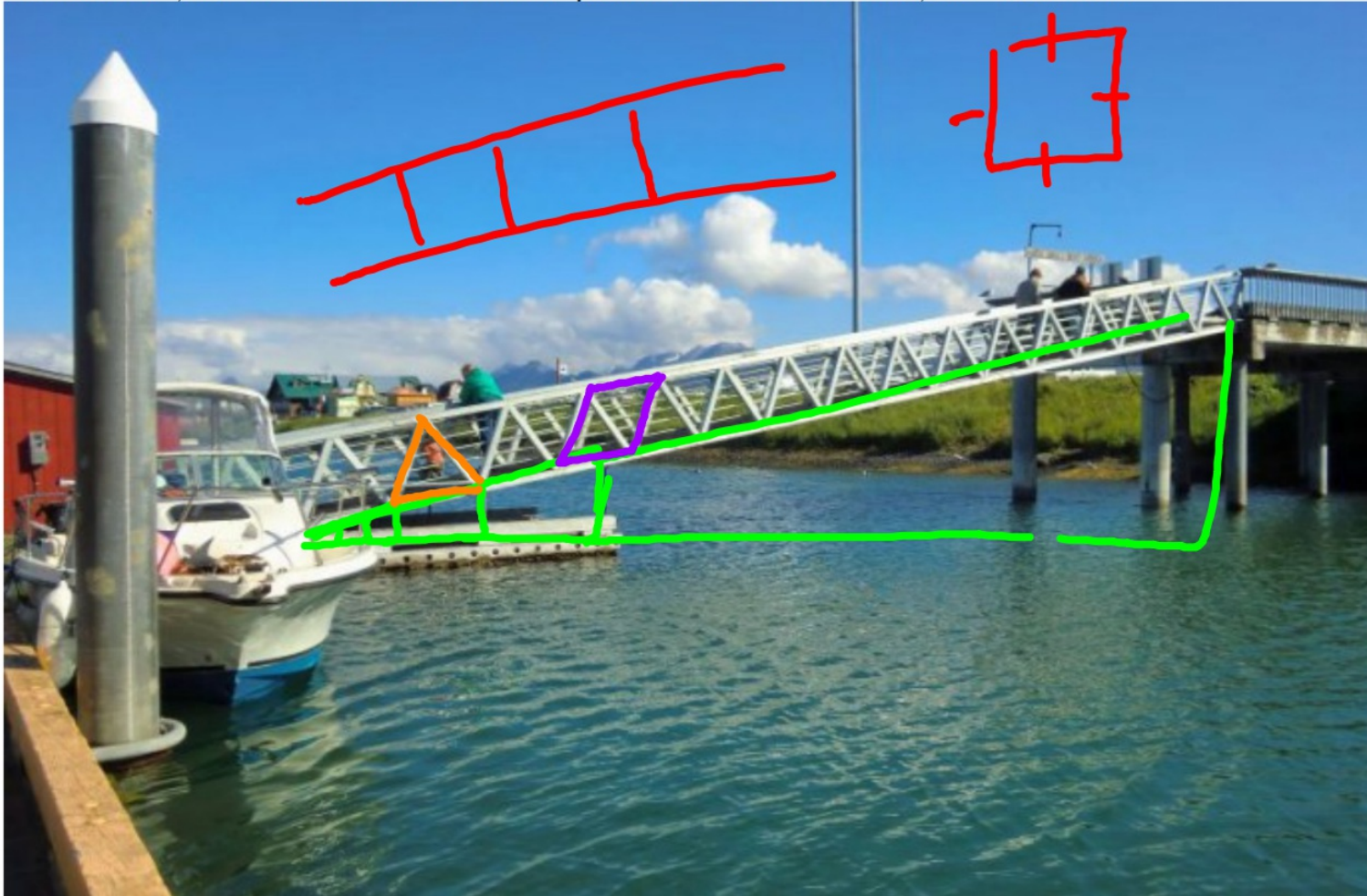
Special Right Triangles

45°

a

$a\sqrt{2}$

45°

a

30°

$a\sqrt{3}$

$2a$

60°

a

Upgrade

$\sin \theta = \dfrac{\text{Opposite}}{\text{Hypotenuse}}$

$\cos \theta = \dfrac{\text{Adjacent}}{\text{Hypotenuse}}$

$\tan \theta = \dfrac{\text{Opposite}}{\text{Adjacent}}$

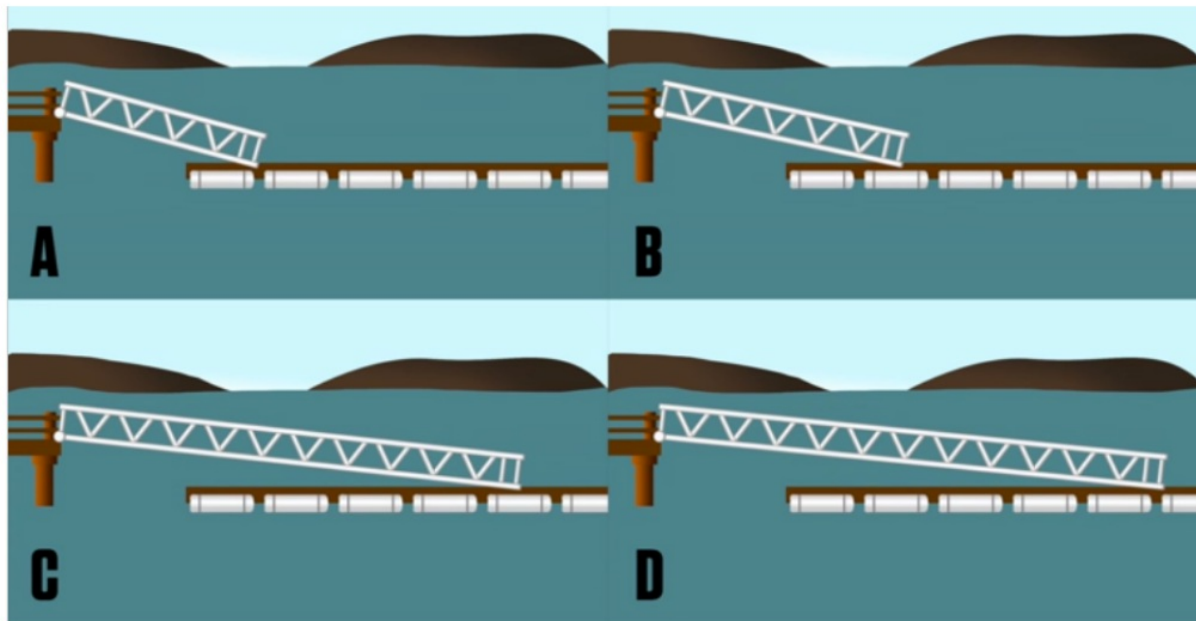Hypotenuse

θ

Opposite

Adjacent

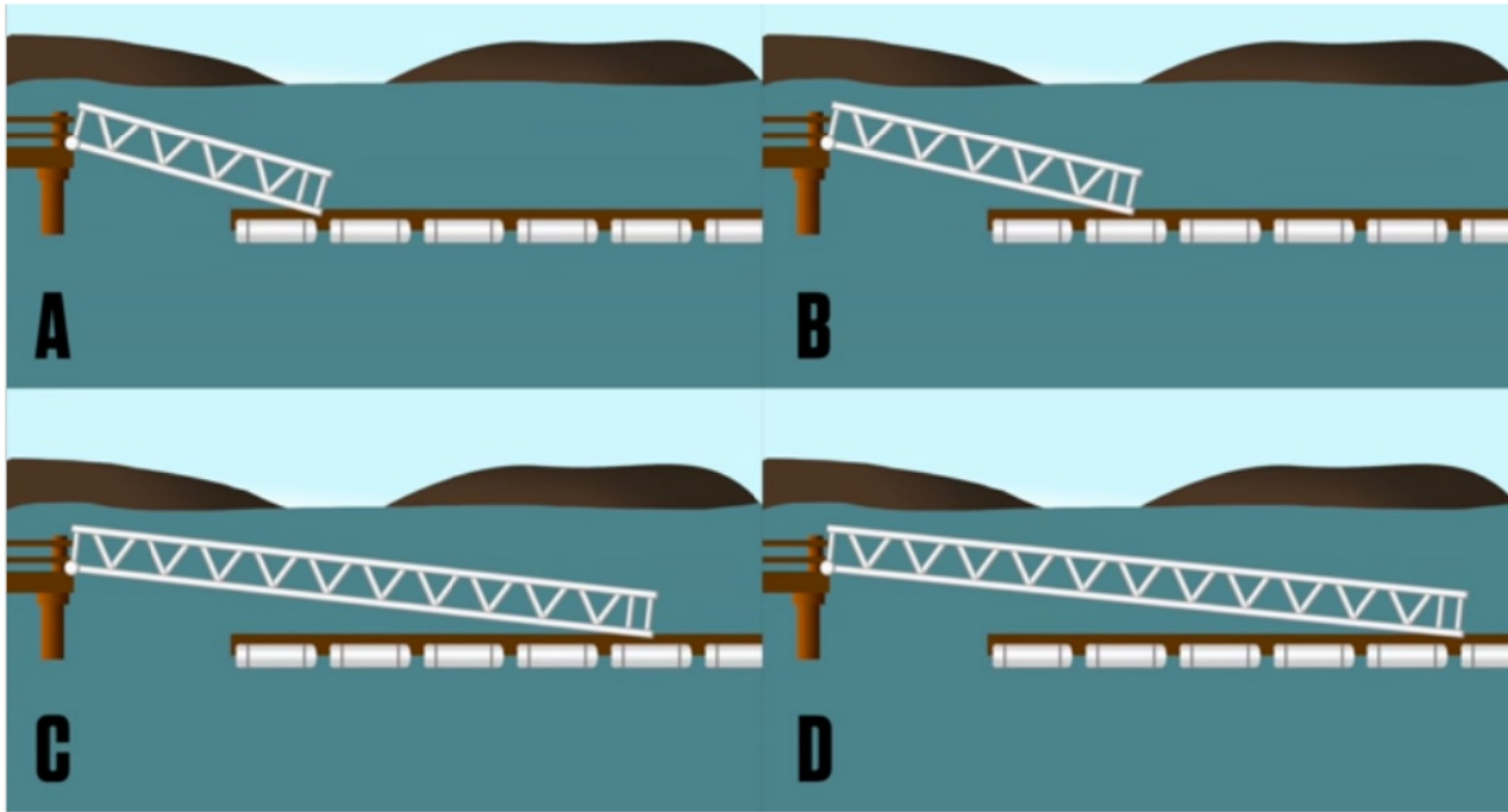What do you notice about this picture? What do you wonder?

What questions could you ask about the following video?

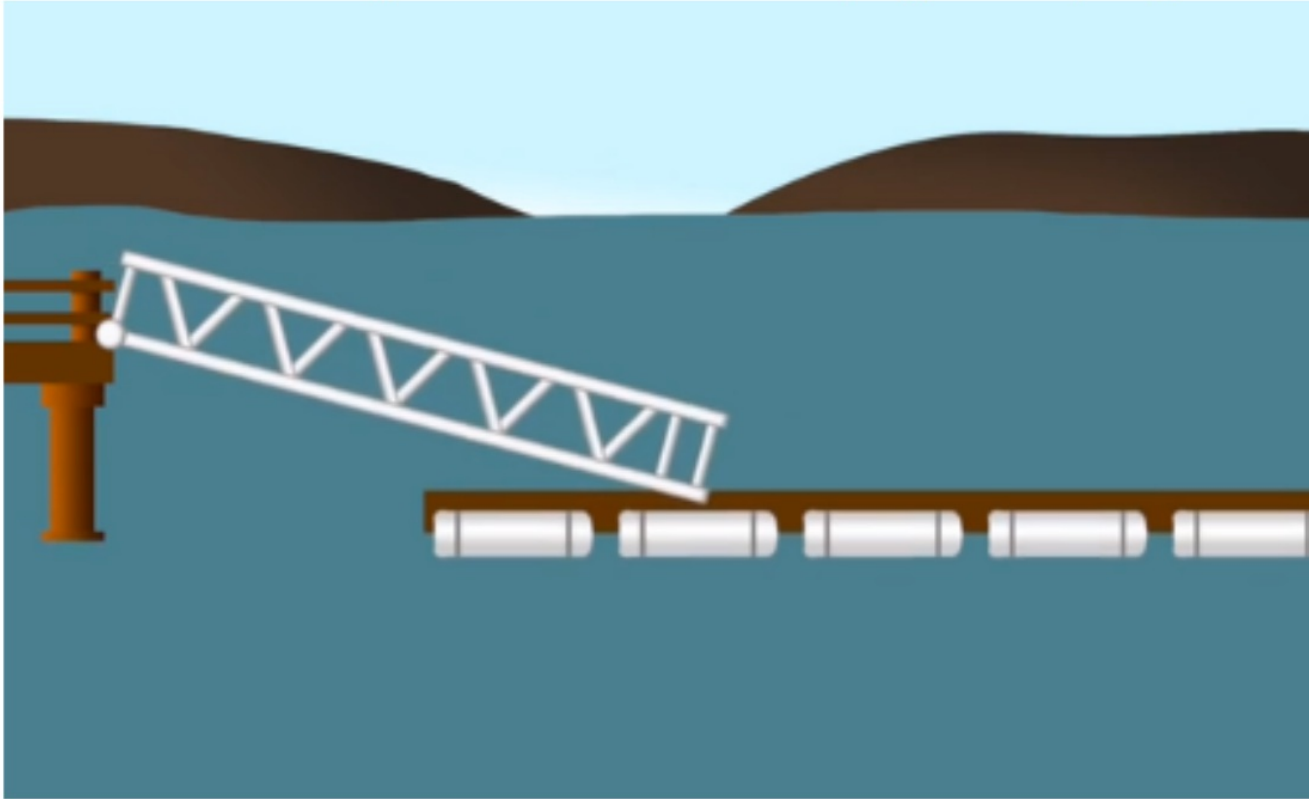# What questions could you ask about the following video?

Questions raised?

Which ramp is best? Why is a short/long ramp good/bad? Tell your neighbors.

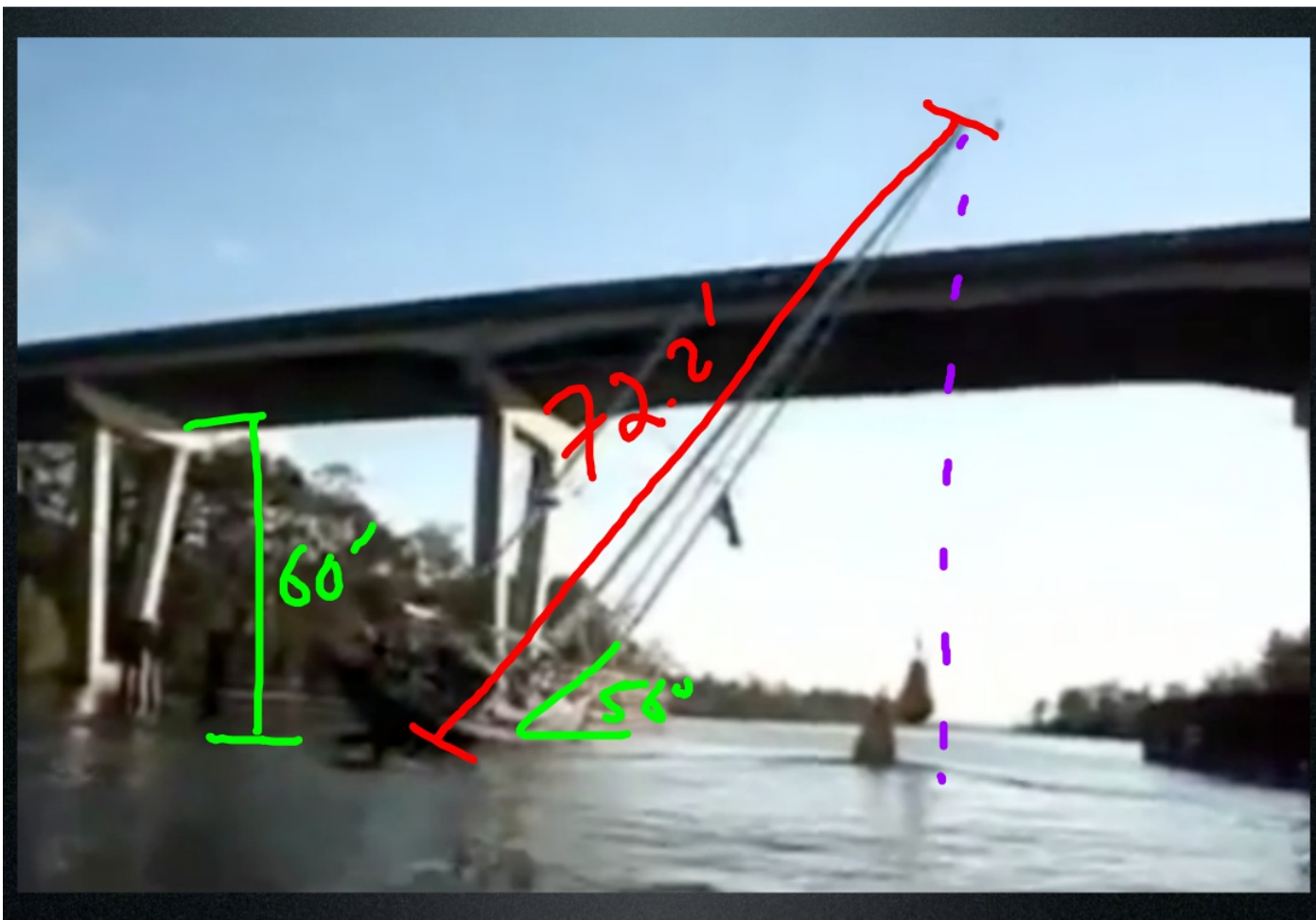What information do you need in order to develop a good ramp length?

Maximum vertical
displacement:
 4.1 meters

Maximum angle at bridge:
18°

Find a good length of ramp to use.

We're gonna watch another short video. What do you notice? What do you wonder?

What do you need to know to solve this?

Mast length: 72.2 ft

Bridge clearance: 60ft

Angle of sway: 56°

Does it work???

Share with your face partner something you understand better now than before.

Trig Kahoot!

PLEASE USE YOUR REAL NAMES

Use your notebook to sketch out your ideas/calculations

Will need a calculator!

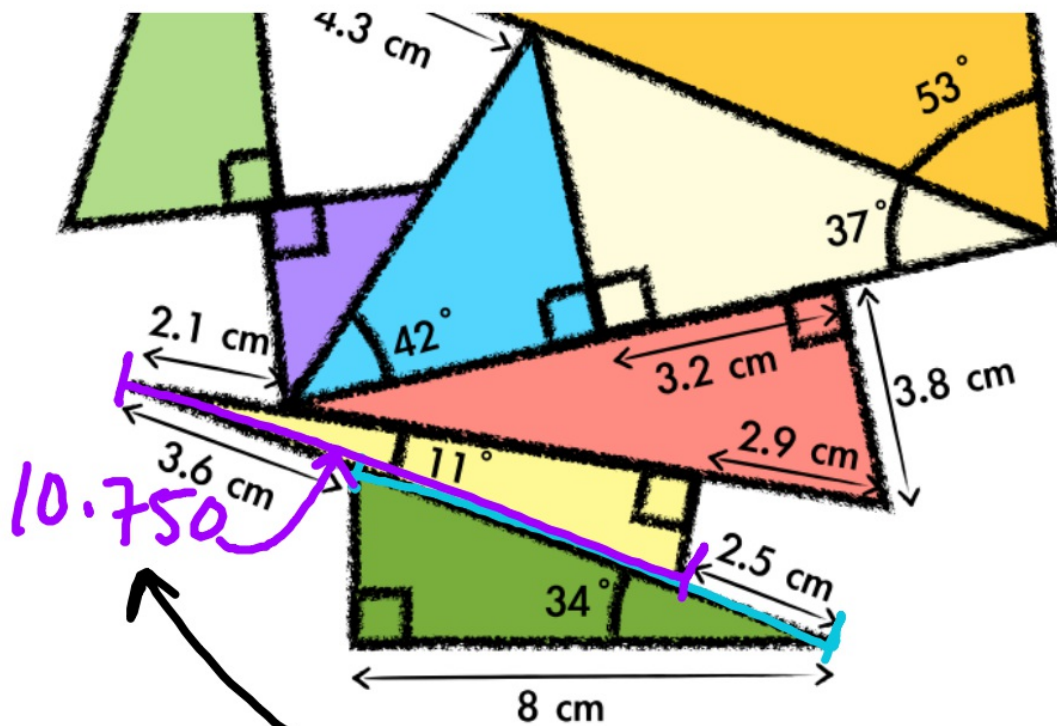The questions are challenging!
Don't just guess!

Trig Stack!

Start from the bottom...find the top!

Private Think Time
Make Sense
Persevere

Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
→ 5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

use 3 decimal places for all trigonometric ratios and length!

4.3 cm

53°

37°

2.1 cm   42°   3.2 cm   3.8 cm

10.750   3.6 cm   11°   2.9 cm

2.5 cm

34°   8 cm

add 3.6   remove 2.5

$$\cos 34 = \frac{8}{x}$$

$$\frac{.829}{1} = \frac{8}{x} \times \frac{8}{x}$$

$$8 = .829 x$$

$$\frac{8}{.829} = \frac{.829 x}{.829}$$

$$9.650 = x$$