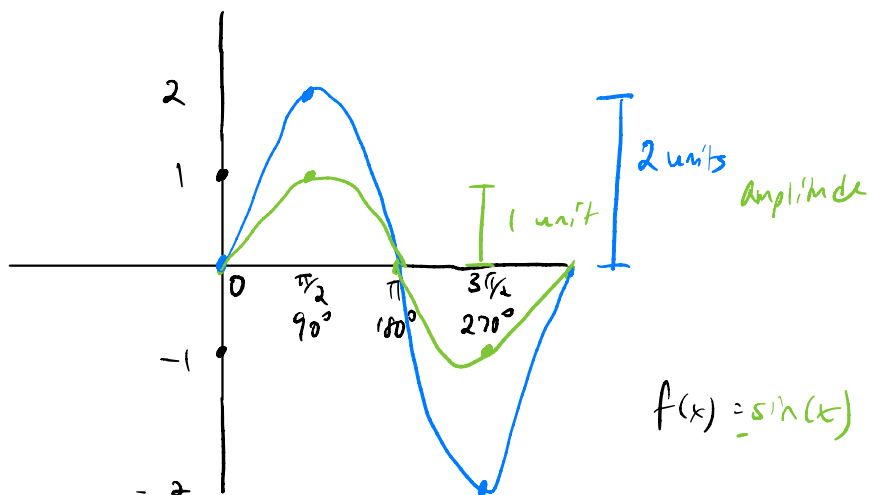


3-13 Math 73C

39 Amplitude

$$f(x) = a \sin(bx + c) + d$$



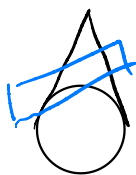
$$f(x) = \sin(x)$$

$$2f(x) = 2\sin(x)$$

$$f(x) = a(x-h)^2 + k$$

a is like amplitude

(b) cross section of a cone



parallel to base
makes circle

what about not parallel? ellipse

59) U.A. of $y = \frac{201x + 202}{203x + 204}$

D. $x = \frac{-204}{203}$

58) inverse function

$$\sin(\theta) = \frac{\text{opposite}}{\text{hypotenuse}}$$

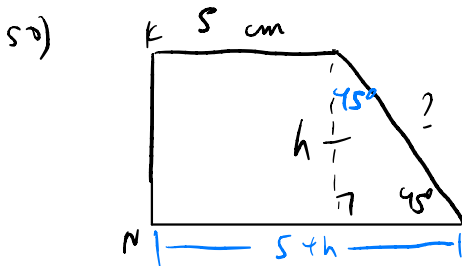
$$\sin^{-1}\left(\frac{\text{opp}}{\text{hyp}}\right) = \theta$$

input output
angle ratio
 (of two sides)

D $\rightarrow \frac{\text{opp}}{\text{adj}}$

Answer has \sin^{-1} , answer must be ≈ 1

On ACT ALL geometry figures are drawn to scale
"unless specify otherwise"



Usually need one step
to get to answer

Our info : b_1

If you see any of these
numbers

| | | | |
|----|----|----|----------------|
| 30 | 60 | 90 | $1:\sqrt{3}:2$ |
| 45 | x | 90 | $1:1:\sqrt{2}$ |
| 3 | 4 | 5 | |
| 5 | 12 | 13 | |

work with that info

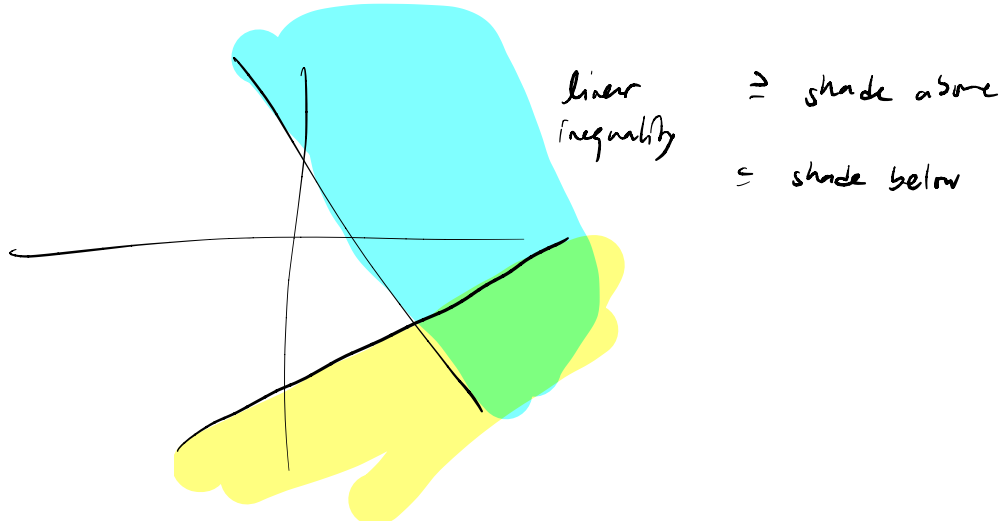
draw figure
later

$$\text{Area}_{\text{trapezoid}} = \frac{(b_1 + b_2)h}{2}$$

Area $\frac{5 + 5+h}{2}$ $h = 12$

$h = 2$, $? = 2\sqrt{2}$

55)



System of linear inequality

Always draw it out/shade

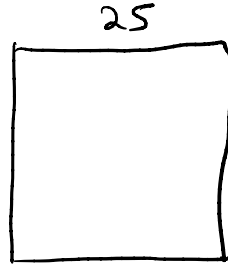
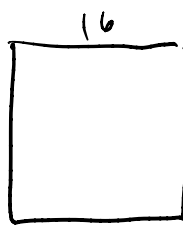
30) $\cos d = \frac{\text{adj}}{\text{hyp}} = \frac{9}{41}$ comes from $\tan a = \frac{40}{9}$

comes from $\sin a = \frac{40}{41}$

$$\tan(x) = \frac{\sin(x)}{\cos(x)}$$

$$\cos(x) = \frac{\sin(x)}{\tan x} = \frac{40}{41} \cdot \frac{9}{40} = \frac{9}{41}$$

51)



pick up 18 integers

1-18
inclusive

| | |
|----|-----------|
| 18 | 7 |
| 17 | 8 |
| 16 | 9 |
| 15 | { 10, 1 } |
| 14 | { 11, 2 } |
| 13 | { 12, 3 } |
| 12 | { 13, 4 } |
| 11 | { 14, 5 } |
| 10 | { 15, 6 } |

15 goes with 1

24)

$$\frac{360 - 20(2)}{2} = \frac{360 - 40}{2} = \frac{320}{2} = 160$$

43)

SH: $100 + 0.25x$

OB

$120 + 0.2x$

read carefully

48)

$$\begin{matrix} \text{rows} & \text{cols} & \text{rows} & \text{cols} \\ (m \times n) & \times & (n \times p) \end{matrix}$$

#cols of first = #rows of second

$2 \times (2 \times 2) \times (3 \times 2)$

$2 \times (3 \times 2) \times (2 \times 2)$

You can always multiply 2 square matrices of the same size.

$$(n \times n) \times (n \times n)$$