

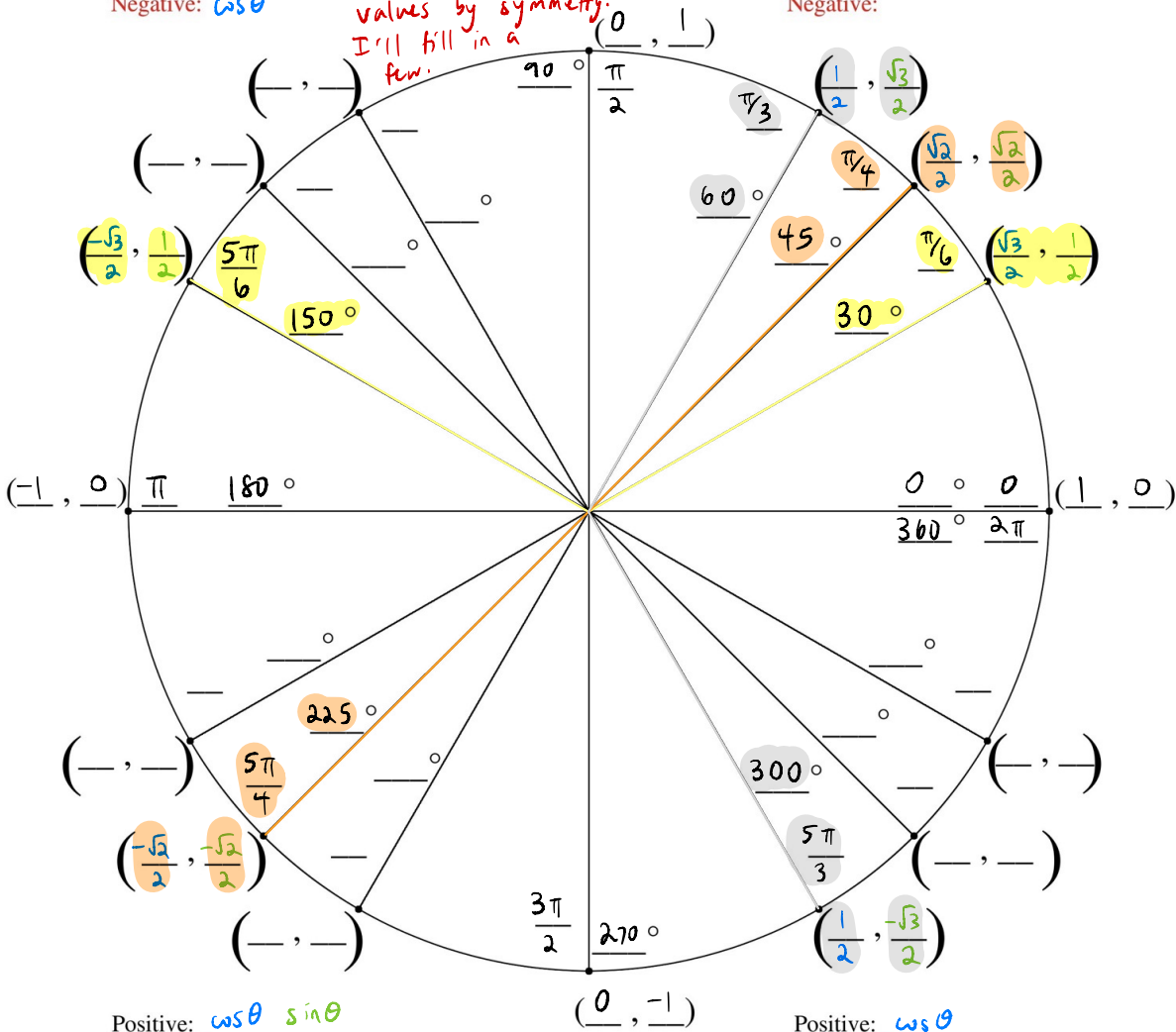
$$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{x}{r} = x \text{ if } r=1 \text{ (unit circle)}$$

Similarly, $\sin \theta = y \text{ if } r=1$

Positive: $\sin \theta$
Negative: $\cos \theta$

Know QII, III, IV
values by symmetry.
I'll fill in a few.

Positive: $\cos \theta$ $\sin \theta$
Negative:

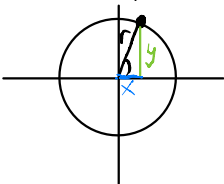


Positive: $\cos \theta$ $\sin \theta$
Negative:

Positive: $\cos \theta$
Negative: $\sin \theta$

Polar
coordinates

Note: in general, $x = r \cos \theta$, $y = r \sin \theta$ because



$$\cos \theta = \frac{x}{r} \Rightarrow x = r \cos \theta$$

Similarly, $y = r \sin \theta$

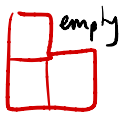
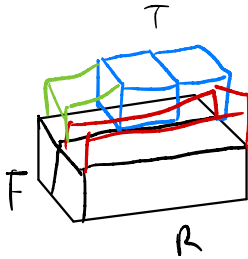
Special case
when $r=1$
(i.e. unit
circle)

So when $r=1$, $\cos \theta = x$ $\sin \theta = y$

Angela 2
Andrey
4-10

Math 215

(60)

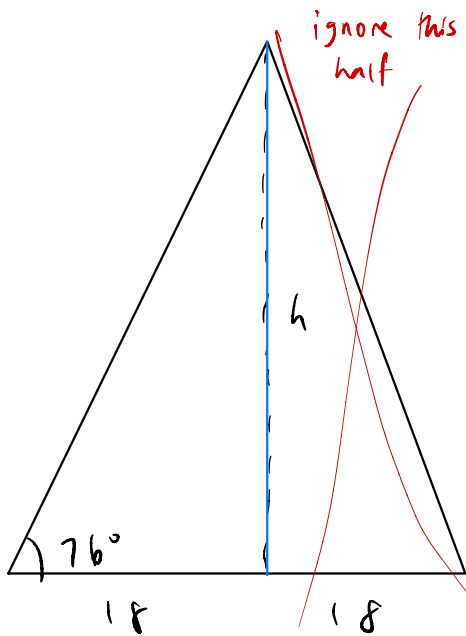


F



R

3r)



right angle

$$\sin = \frac{\text{opp}}{\text{hyp}} \quad \cos = \frac{\text{adj}}{\text{hyp}}$$

$$\tan = \frac{\text{opp}}{\text{adj}}$$

$$\tan(76^\circ) = \frac{h}{18}$$

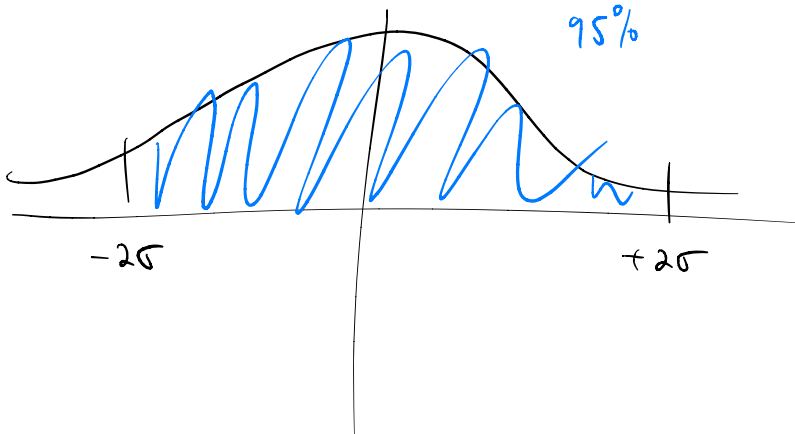
$$h = 18 \tan(76^\circ)$$

non right angle

$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

57)



33)

$\{HT, TH, TT\}$
 equal chance

HH on 1st toss
 is $\frac{1}{4}$

Independent

A = event 1
 B = event 2

If independent, $P(A|B) = P(A)$
 ↓
 given

Also if independent,

$P(A \cap B) = P(A)P(B)$
 and

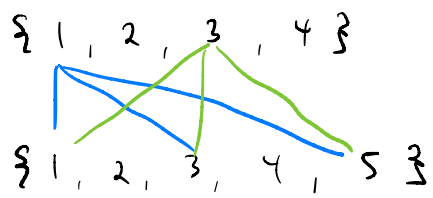
54)

✓

Only odd · odd = odd

2 shirts

3 pants



How many outfits? $2 \cdot 3 = 6$

$$\frac{6}{20} = \frac{3}{10}$$

44)

$$\sin \theta = \frac{\text{max width}}{\text{max length}} = \frac{0.6}{1.2} = \frac{1}{2}$$

F. 30°

Focus only on important things when doing an

"overloaded" question

55) Want volume

units Area = length²

$$A = 630 \text{ ft}^2$$

units Volume = length³

$$\text{depth} = 5 \text{ ft}$$

$$\text{Volume} = 3150 \text{ ft}^3$$

$$\text{perimeter} = \text{length} + \text{length} = \text{length}$$

$$\text{volume} =$$

$$\cancel{\text{length}^3}$$

50)

$$380204032^{\frac{1}{5}} = 52$$

between 10 and 100

$$10^5 = 100000$$

$$100^5 = 10000000000$$

$$\leftarrow 380204032 \rightarrow$$

mul, mths
mths

58)

$$18 = \det \left(\begin{bmatrix} 4 & b \\ 2 & 3 \end{bmatrix} \right) = 12 - 2b = 18$$

$$b = -3$$

$$\det \begin{pmatrix} a & b \\ c & d \end{pmatrix} = ad - bc$$

$$x + 2y = a$$

$$2x + 4y = b$$

How many
solutions?

$$\det \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix} = 1(4) - 2(2) = 0$$



If $a=b$, ∞
Else, 0