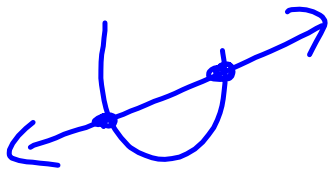


Factoring / Rationals

Functions

→ graphing / transformations /
equations / describe / domain /
range / inverse

System of functions P.O.I.



$$y = x^2 + 4x + 8$$

$$y = 2x + 9$$

set =

$$2x + 9 = x^2 + 4x + 8$$

Radicals

Quadratics

-determine equations, find
zeros, missing value (discriminate)
of zeros (discriminate)

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

solve for
"k" using
discriminate

Exponential

Exponent rules

Exponential Functions

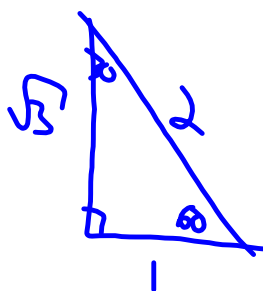
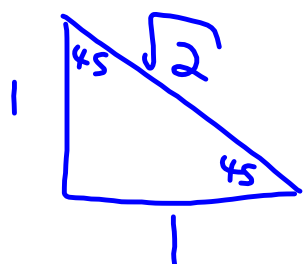
- Graphing / word problems
 → growth / decay.

Trigonometry

SINE LAW / COSINE LAW.

Ambiguous Case (2 triangles - SINE LAW)

$\frac{S}{\sin A} = \frac{T}{\sin C}$ Cast Rule
 → Possible values of θ

Special Δ s.

Graphing \sin + \cos → transformations
 → amplitude, phase shift, etc.

Word problems

→ ferris wheel, bike, etc.

Trig identities

Sequence + Series

Create a sequence or series given a situation.

→ Determine term, sum, etc.

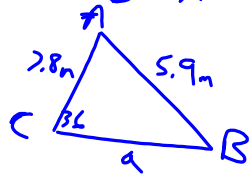
Pascals Δ s → create it, use it.
binomials, describe patterns.

Finance (10)

Applying in word problems

Ambiguous Case

Solve the triangle if $C = 36^\circ$,
 $b = 7.8m$ and $c = 5.9m$



CASE 2

CASE 1

$$\frac{5.9}{\sin 36} = \frac{7.8}{\sin B}$$

$$\frac{7.8 \times \sin 36}{5.9} = \sin B$$

$$0.777 = \sin B \rightarrow \sin^{-1}$$

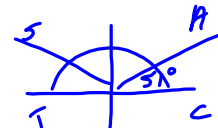
$$51^\circ = B$$

$$\angle A = 180 - 51 - 36 = 93^\circ$$

$$\frac{5.9}{\sin 36} = \frac{a}{\sin 93}$$

$$\frac{5.9 \times \sin 93}{\sin 36} = a$$

$$10.0m = a$$



CASE 2

$$\angle B = 180 - 51 = 129^\circ$$

$$\angle A = 180 - 129 - 36 = 15^\circ$$

$$\frac{5.9}{\sin 36} = \frac{a}{\sin 15}$$

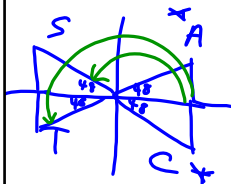
$$\frac{5.9 \times \sin 15}{\sin 36} = a$$

$$2.6m = a$$

CAST RULE

Determine all θ

if $\cos \theta = \frac{2}{3}$ if $0 \leq \theta \leq 30$



$$\theta = \cos^{-1}\left(\frac{2}{3}\right) = 48^\circ$$

$$\text{OR } 360 - 48 = 312^\circ$$

2) Determine θ if $\cos \theta = -\frac{2}{3}$

$$\therefore \theta = 180 - 48 = 132^\circ$$

$$\theta = 180 + 48 = 228^\circ$$

SIMPLIFY

$$a) \left(-3x^2y\right)^4$$

$$= 81x^8y^4$$

$$b) (3x + 4y)^0 = 1$$

$$d) \left(\frac{49}{81}\right)^{\frac{1}{2}} = \frac{7}{9}$$

$$c) \frac{(3x)^{-1}}{6x^2}$$

$$= \frac{1}{(3x)(6x^2)}$$

$$= \frac{1}{18x^3}$$

p.239

$$e) \left(\frac{2abc^3}{(2a^2b^3c)^2}\right)^{-2}$$

$$= \left(\frac{(2a^2b^3c)^2}{2abc^3}\right)^2$$

$$= \left(\frac{4a^4b^6c^2}{2abc^3}\right)^2$$

$$= \frac{16a^8b^{12}c^4}{4a^2b^2c^6}$$

$$= \frac{4a^6b^{10}}{c^2} \checkmark$$

You take 350mg of medicine.
 Each hour the the amount of
 medicine in your body decreases
 by 10%. a) How long until there
 is about 300mg left?

$$y = ab^x$$

$$y = 350(0.9)^x$$

$$300 = 350(0.9)^x$$

$$\frac{300}{350} = 0.9^x$$

$$0.857 = 0.9^x$$

$$x = 1.5 \text{ hours.}$$

b) How much is left after 7 hours

$$y = 350(0.9)^x$$

$$= 350(0.9)^7$$

$$= 167 \text{ mg}$$

b → growth
or
decay