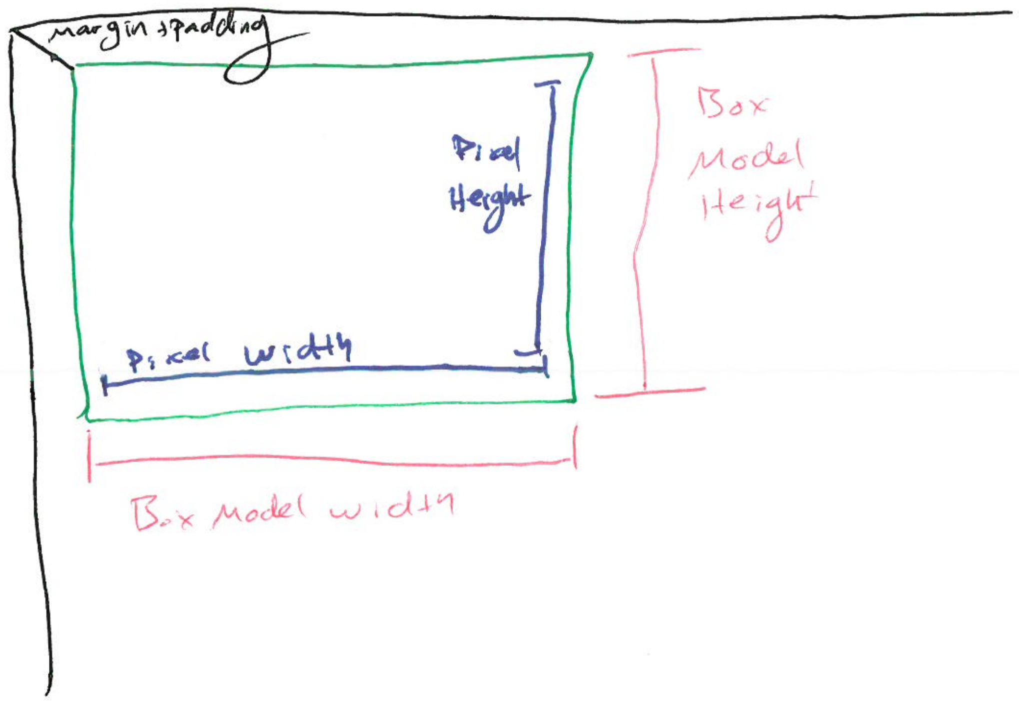
Full Screen Canvas



Ways to Fill the Screen:

A) Don't
B) Poll the size of the window, change canvas size + pixels
C) Listen for events, change canvas size + pixels

Colors in Js/CSS

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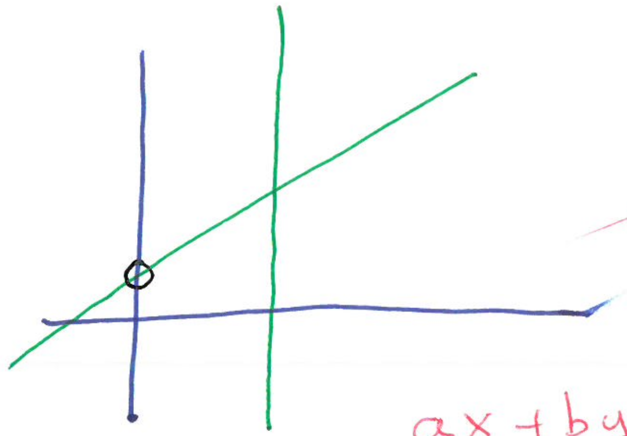
"blue"

#FFFFFF

"rgb(255, 255, 255)"

"rgba(255, 255, 255, 1)"

Points + Lines



~~$y = mx + b$~~

~~$m = \text{slope}$~~

~~$b = y \text{ intercept}$~~

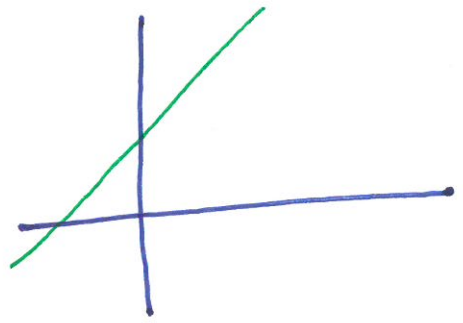
$$\underbrace{ax + by}_{\text{Perpendicular}} + \boxed{c} = 0$$

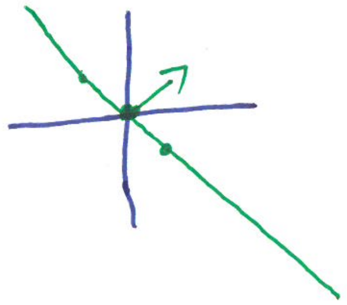
→ distance from origin

$x + 1y + 0 = 0$

4, 8

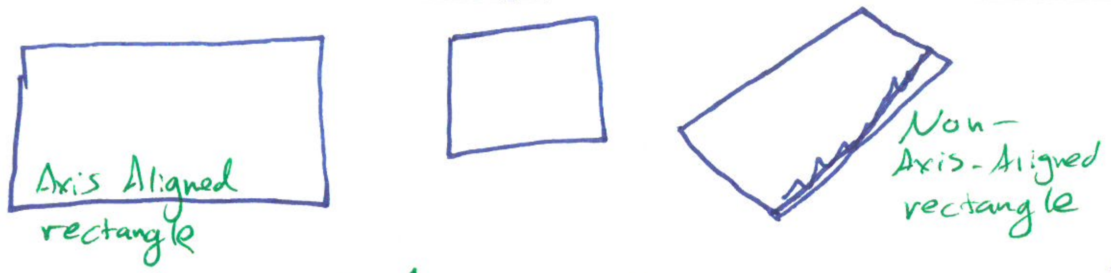
$4 + 8 + 0 = 12$

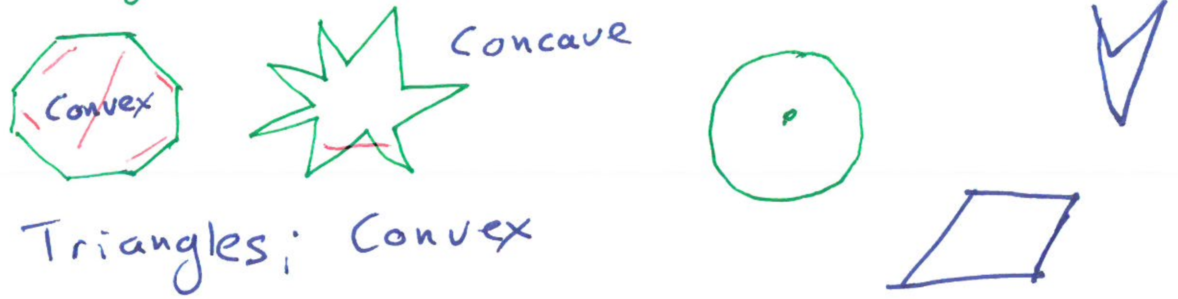




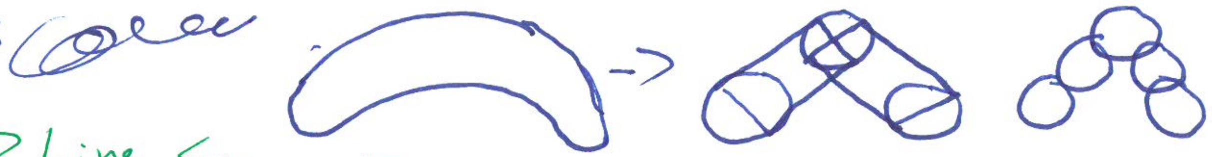
Master List of Collision Objects

- Rectangles
- Polygons
- Circles
- Triangles
- Walls
- Parallellagrams → convex polygon
- Boomerangs
- Lines → Line Segments
- Point
- Enemies
- Other Players
- Ground
- Power ups
- Projectiles





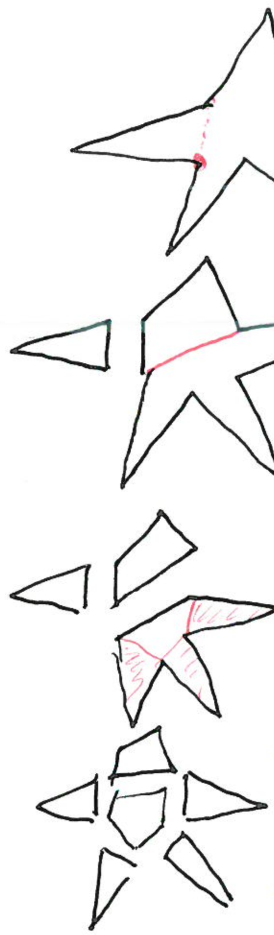
Triangles; Convex



Line - infinite both directions
Ray - infinite one direction
Line Segment - capped both ends

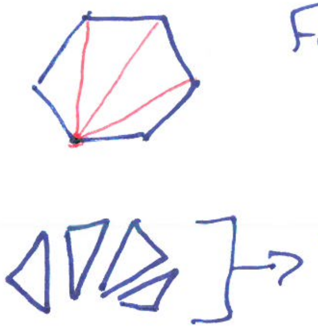
Concave to Convex

Different Algorithms

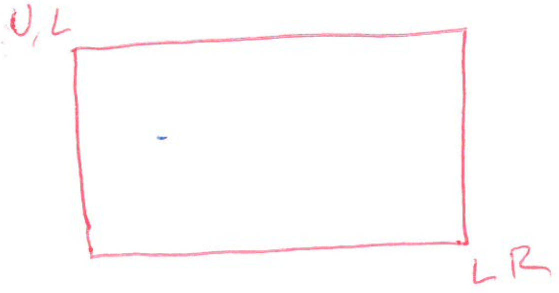


Convex to ~~Conc~~ Triangles

Fan Algorithm



Point + AAR

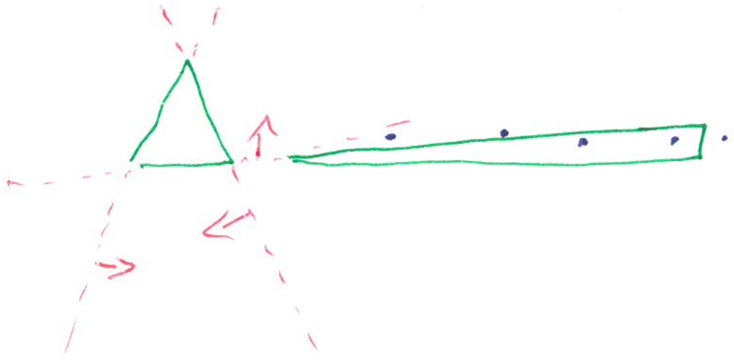


U, L = x, y
L, R = x, y
P = x, y

$UL_x < P_x < LR_x$

$UL_y < P_y < LR_y$

Point + Triangle – 3 Line Test



└ A point is on the inside of a triangle if: it is on the same side on all three lines.

Table of Collisions

One ↓ Two →	Point	Circle	AAR	Tri	Convex	Concave
Point	✗	SWAP	SWAP		SPLIT INTO TRIS	SPLIT INTO CONVEX
Circle	Circle/Point Collision					
AAR	4 if statements					
Tri						
Convex	SPLIT into Tris					
Concave	SPLIT INTO CONVEX					