

# Game Physics Notes 04

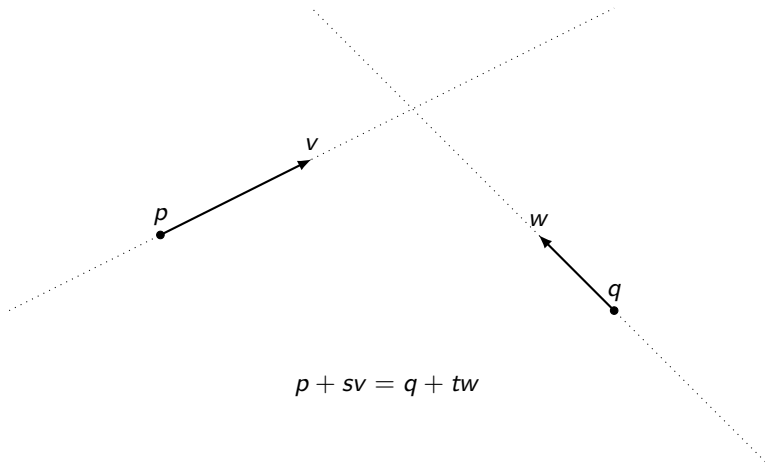
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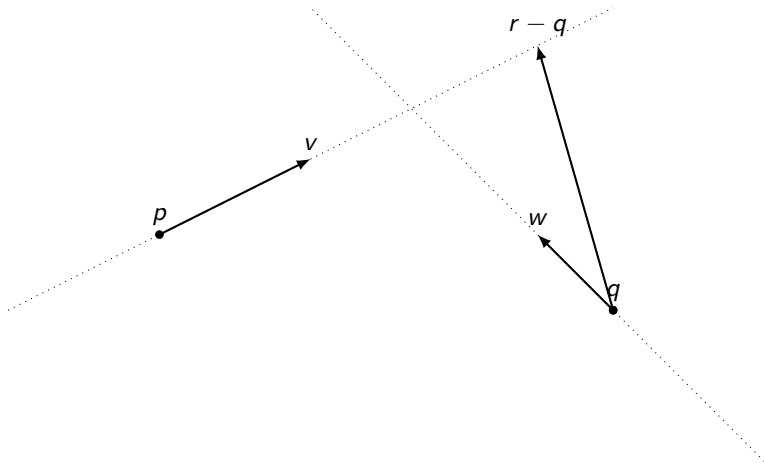
# Intersect two lines

- ▶ Have to solve for both  $s$  and  $t$ .
- ▶ Should be a better way.



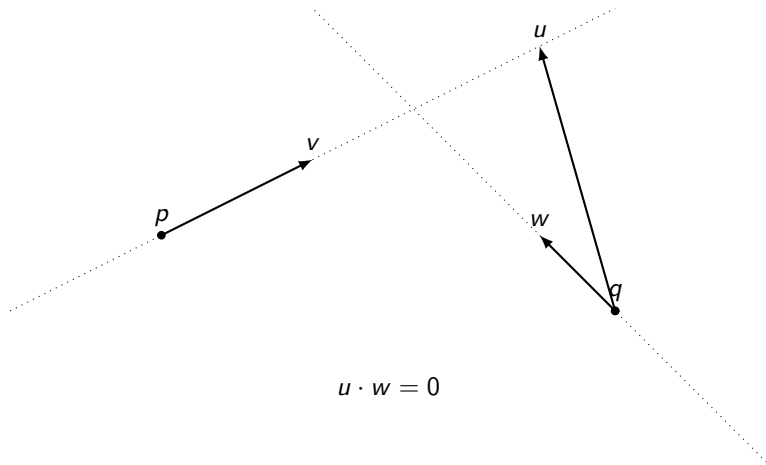
# Intersect two lines

- What will be true about  $r - q$  if  $r$  is on second line?



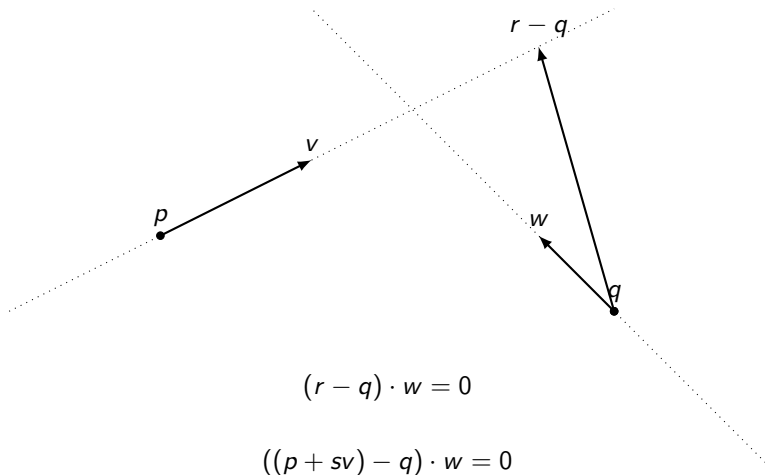
# Constraint on points in a line

- Parametric vs. Implicit



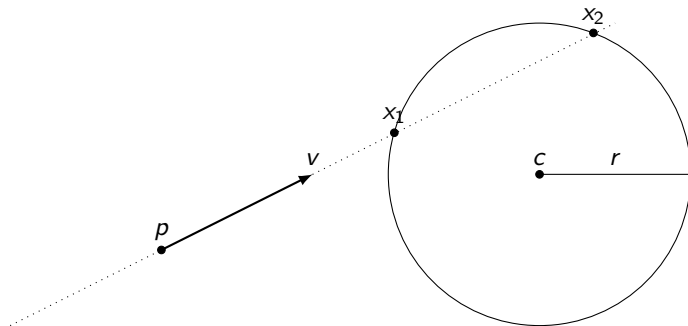
# Intersect two lines

- ▶ use parametric for one and implicit for the other.
- ▶ Solve for  $s$  in the resulting equations.



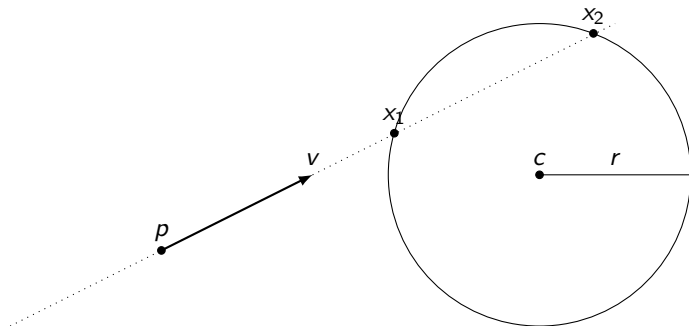
# Intersect line and circle

- What is the implicit representation of a circle?



# Intersect line and circle

- What is the parametric representation of a line?

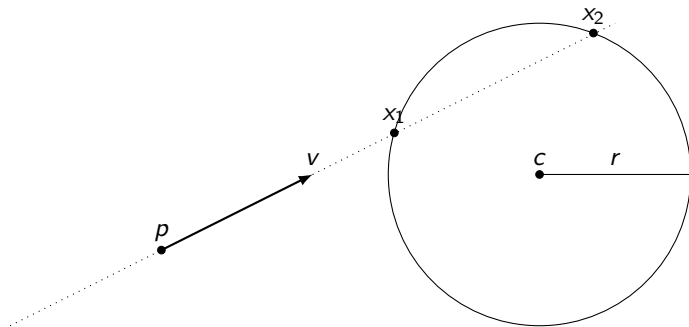


$$|x_1 - c|^2 = r^2$$

$$|x_2 - c|^2 = r^2$$

# Intersect line and circle

- ▶ Solve for  $s$  in the quadratic equation.
- ▶  $x_1 = p + s_1 v$
- ▶  $x_2 = p + s_2 v$



$$|(p + sv) - c|^2 = r^2$$