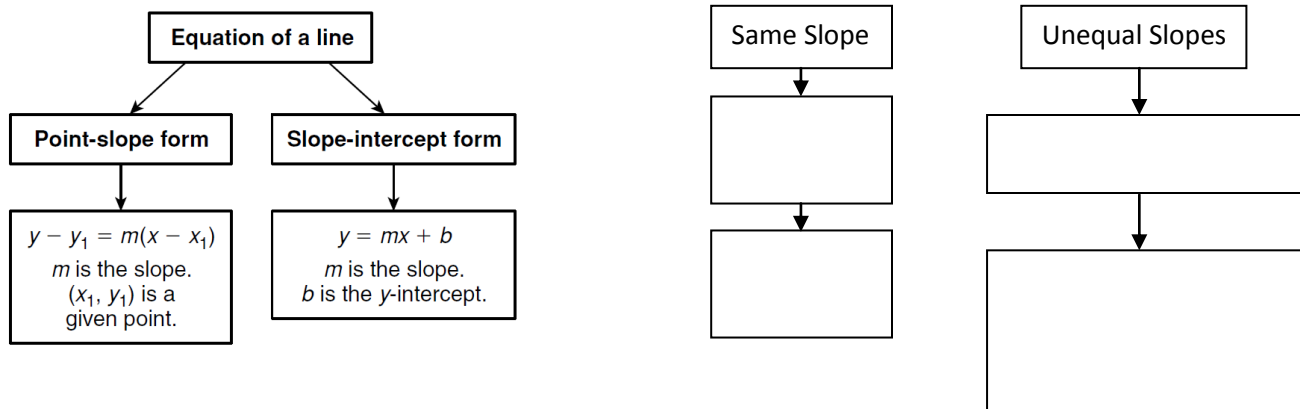


Extra Review Day - Lines Review

For 1-5, write the equation of the line in **POINT-SLOPE** form for each of the following:

- 1) Line \overline{PQ} through P(9,3) and Q(-5,6)
- 2) The line perpendicular through \overline{PQ} that goes through (-1,2)
- 3) The line parallel through \overline{PQ} that goes through (-1,2)
- 4) The line perpendicular to the line $y = \frac{3}{4}x + 9$ that passes through (-1,2)
- 5) The line parallel to the line $7y - 8 = 3x$ that passes through (-1,2)

6) Determine the relationship that exists between the lines $y - 5 = \frac{3}{4}(x - 8)$ and $4y = 3x - 1$. Explain your reasoning.

7) Use slopes to determine the relationship that exists between line u that passes through (8,0) and (0,3) and line w that passes through (6,7) and (-2,4). Explain your reasoning.

Line Relationship Theorems

Main idea:

Parallel lines are perpendicular to the same line. Draw it.

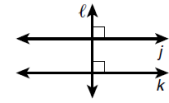
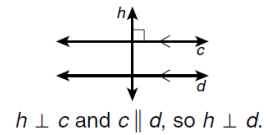
Perpendicular Transversal Theorem

In a plane, if a transversal is perpendicular to one of two parallel lines, then it is perpendicular to the other line.

Symbols: \perp Transv. Thm.

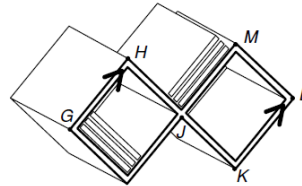
If two coplanar lines are perpendicular to the same line, then the two lines are parallel to each other.

Symbols: 2 lines \perp to same line \rightarrow 2 lines \parallel .



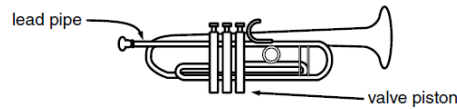
A wall rack for holding CDs is shown. Use the figure for Exercises 1 and 2.

1. Explain why \overline{HK} must be perpendicular to \overline{KL} .



2. If $\overline{JM} \perp \overline{HK}$, explain why $\overline{JM} \parallel \overline{GH}$.

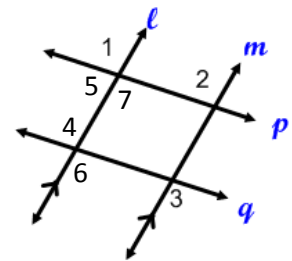
3. The valve pistons on a trumpet are all perpendicular to the lead pipe. Explain why the valve pistons must be parallel to each other.



Parallel Lines \leftrightarrow Angle Pairs (type + congruent or supplementary)

- 1) Given $l \parallel m$, describe the relationship you would need in order to prove $p \parallel q$ using:

- A. $\sphericalangle 1$ & $\sphericalangle 6$
- B. $\sphericalangle 1$ & $\sphericalangle 4$
- C. $\sphericalangle 4$ & $\sphericalangle 5$
- D. $\sphericalangle 4$ & $\sphericalangle 7$



- 2) Given only $\sphericalangle 7 \cong \sphericalangle 3$, can you prove any parallel lines? Why or why not?

- 3) Given: $\sphericalangle 4 \cong \sphericalangle 3$
Prove: $\sphericalangle 1 \cong \sphericalangle 2$