DO EXTRA CREDIT LAST. NO EXTENDED TIME FOR E.C.

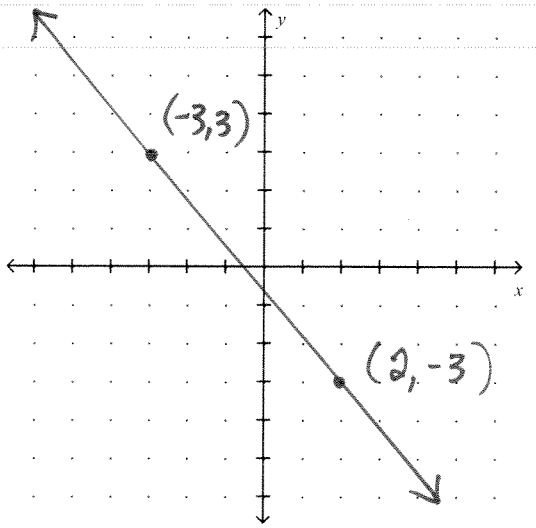
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

B

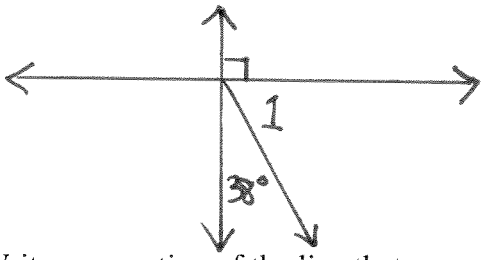
Geometry and Advanced Geometry Q3A (3.4-3.6)

E.C. 1. Extra Credit: Write an equation of a line with undefined slope that passes through the point (3, -2)

2. Write an equation of the line shown:



3. Find $m\angle 1$.



4. Write an equation of the line that passes through point P and is parallel to the line with the given equation.

P (-2, 1) $10x + 4y = -8$

5. Graph a line with the given description: (Graph Paper!!)

Through (1, 3) and perpendicular to the line through (-1, -1) and (2, 0)

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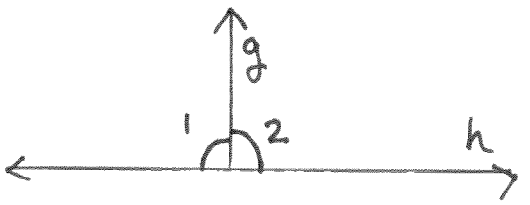
6. Tell whether the lines through the given points are parallel, perpendicular, or neither. Justify your answer.

   Line 1: (-3, 1) (-7, -2)
   Line 2: (2, -1) (8, 4)

7. Complete the proof that if two lines intersect to form a linear pair of congruent, then the lines are perpendicular.

   GIVEN: $\angle 1$ and $\angle 2$ are a linear pair.
   $\angle 1 \cong \angle 2$

   Prove: $g \perp h$



Statements	Reasons
1. $\angle 1$ and $\angle 2$ are a linear pair.	1. Given
2. $\angle 1$ and $\angle 2$ are supplementary.	2. ??
3. ??	3. Definition of supplementary angles.
4. $\angle 1 \cong \angle 2$	4. Given
5. $m\angle 1 = m\angle 2$	5. ??
6. $m\angle 1 + m\angle 2 = 180^o$	6. Substitution Property of Equality.
7. $2(m\angle 1) = 180^o$	7. Combine like terms
8. $m\angle 1 = 90^o$	8. ??
9. ??	9. Definition of a right angle.
10. $g \perp h$	10. ??

8. Write an equation of the line that passes through the given point P and has the given slope m.

   P(-8, -2) $m = -\frac{2}{3}$

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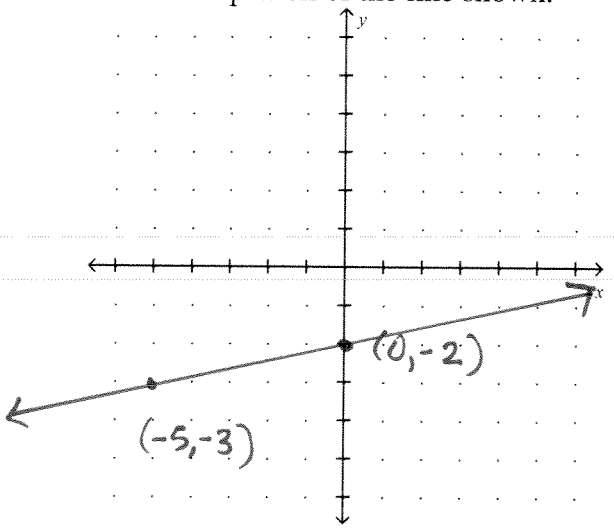
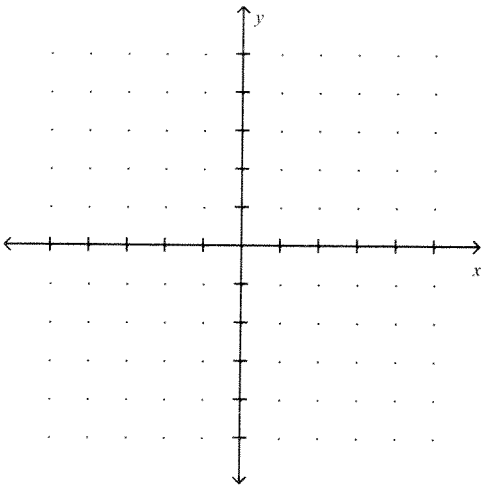
9. Write an equation of the line shown.



10. Write an equation of the line with the given slope m and y-intercept b.

m = 4 b = -6

11. Graph the equation:
$x + y = 1$



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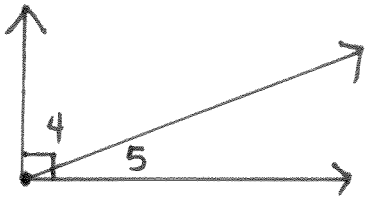
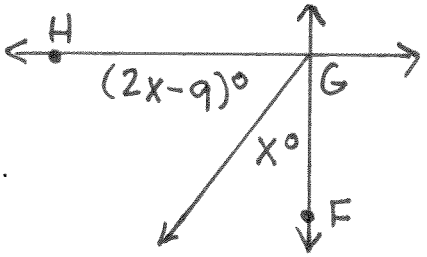
12. Write the theorem that justifies the statement.



∠4 and ∠5 are complementary.

13. In the diagram, $\overleftrightarrow{FG} \perp \overleftrightarrow{GH}$. Find the value of x.



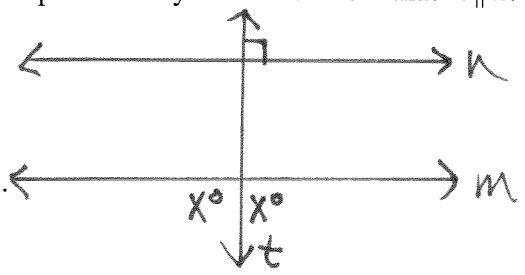
14. Tell which line through the given points is steeper.

Line 1: (-2, -1) (1, -2)
Line 2: (-5, -3) (-1, -4)

E.C. 15. (extra credit) Find the unknown coordinate so the line through the points has the given slope

(-7, -4), (x, 0) slope $\frac{1}{3}$

16. Explain how you would show that $m \parallel n$.



17. Find the midpoint of $\overline{PQ}$. Then write an equation of the line that passes through the midpoint and is perpendicular to $\overline{PQ}$. This line is called perpendicular bisector of $\overline{PQ}$.

P(-5, -5), Q(3, 3)

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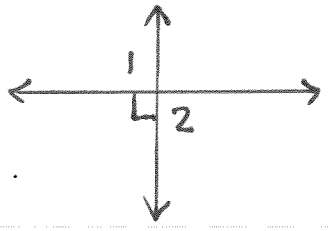
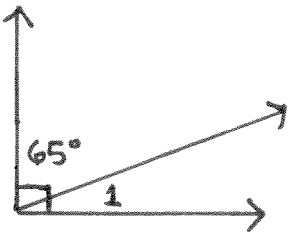
18. Write the theorem that justifies the statement. ∠1 and ∠2 are right angles.



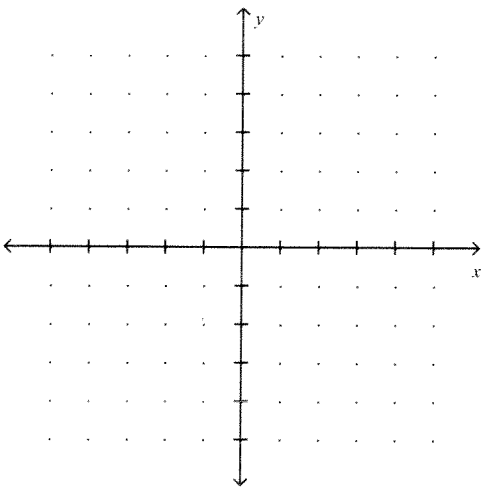
19. Find $m\angle 1$.



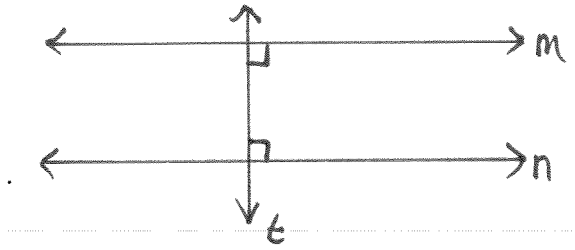
20. Write an equation of the line that passes through point P and is parallel to the line with the given equation.

P (0, -1) $y = -2x + 3$

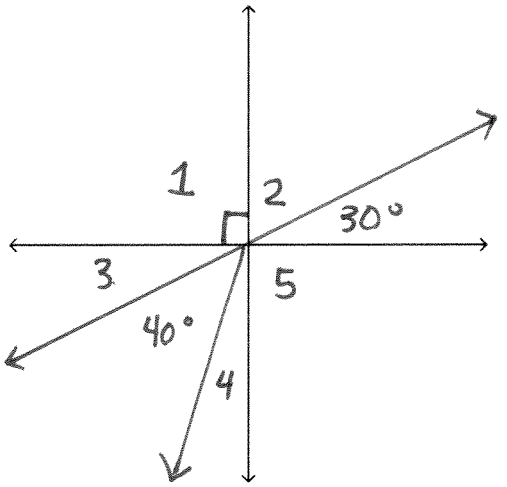
21. Graph the equation:
$8x + 2y = -10$



22. Explain how you would show that $m \parallel n$.

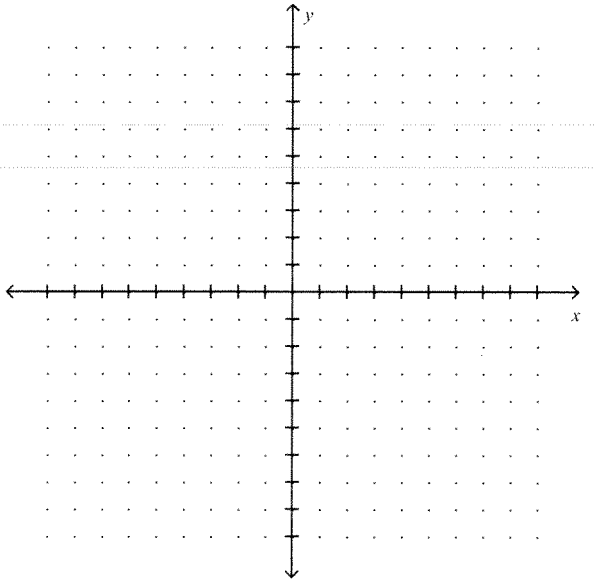


23. Find all the unknown angle measures in the diagram at the right. Justify your reasoning for each angle measure.

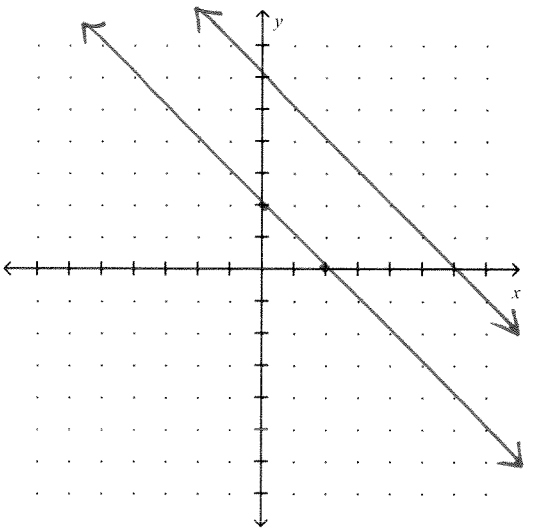


24. Graph the line through the given point with the given slope.

P(3, -2) Slope: $-\frac{1}{6}$



25. Use the distance formula to find the distance between the two parallel lines. Round to the nearest tenth, if necessary.



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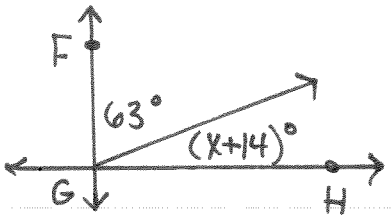
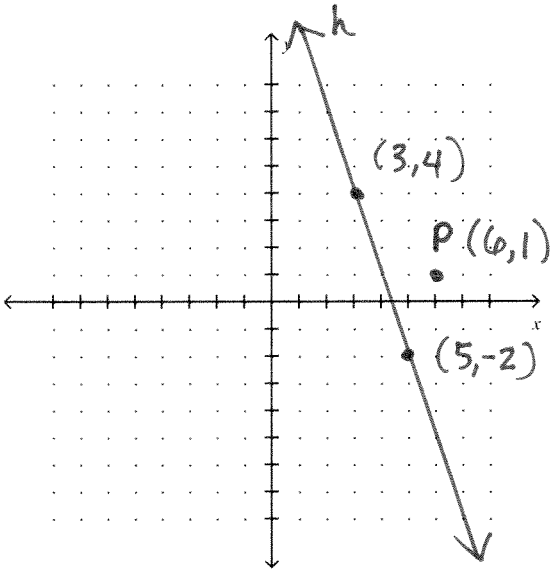
26. In the diagram, $\overleftrightarrow{FG} \perp \overleftrightarrow{GH}$. Find the value of x.



27. Find the slope of line n perpendicular to line h and passing through point P. Graph line n.



28. Write an equation of the line that passes through the given point P and has the given slope m.

P (6, -2) m = 3