**1E Train Tracks** Name: _____Per: _____

**NO WORK, NO CREDIT. PENCIL ONLY.**

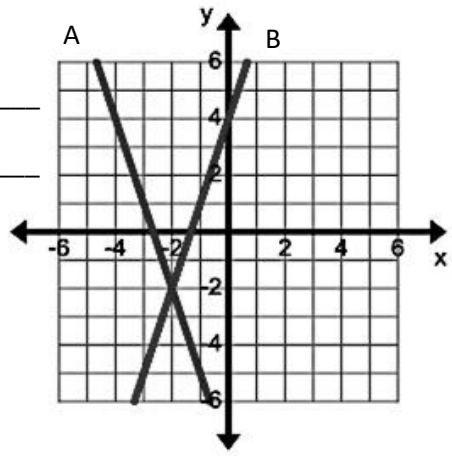
1. Find the **negative reciprocal** of the following

a. $\frac{2}{3}$ b. $-\frac{1}{5}$ c. $\frac{5}{3}$ d. 7

2. **Explain how you know** from their slopes whether the lines on the graph are parallel:_____, perpendicular:_____, or neither:_____.

Given the graphs below, find **the slope** of each line and then circle whether the lines are **parallel**, **perpendicular, or neither**.

3.

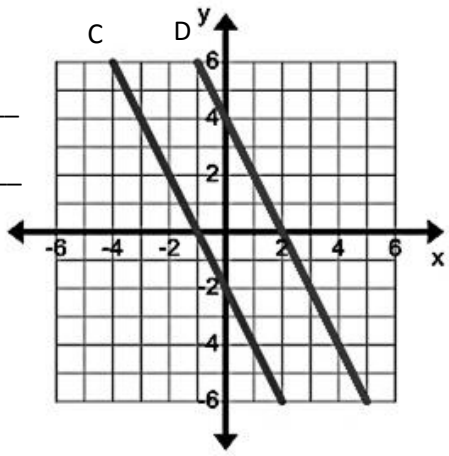



A Slope _____

B Slope _____

Parallel Perpendicular Neither

4.

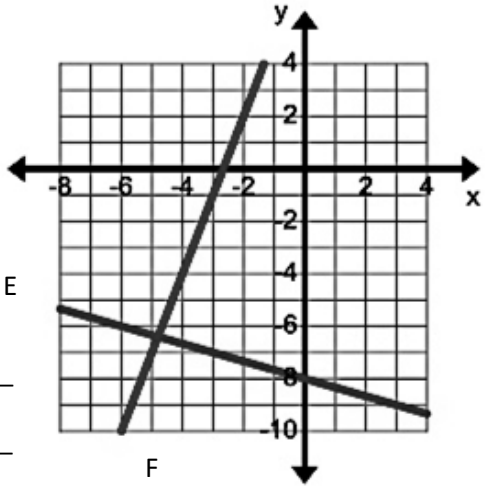



C Slope _____

D Slope _____

Parallel Perpendicular Neither

5.

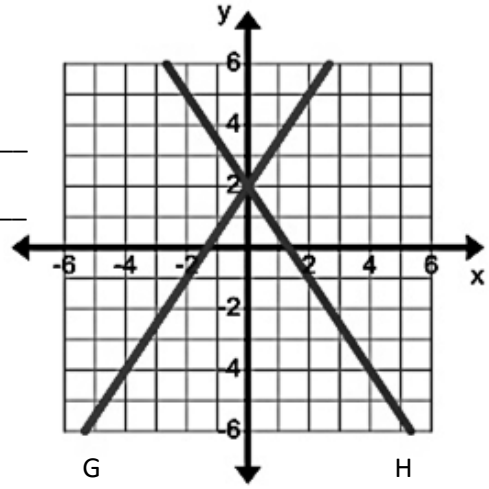



E Slope _____

F Slope _____

Parallel Perpendicular Neither

6.




G Slope _____

H Slope _____

Parallel Perpendicular Neither

Tell whether the following lines are **parallel, perpendicular, or neither** given the equations below. SYW.

7. $y = -2x + 5$ and $y = 2x - 3$

8. $-8y = 3x - 16$ and $6y = 16x - 9$

Explain how you know that the lines through the points are **parallel, perpendicular, or neither**.

EX: Line A (2, 5) & (−2, 7); Line B (0, 4) & (1, 6)

Slope of Line A: $-\frac{1}{2}$

Slope of Linea B: $2$

The slopes of Line A and Line B are negative reciprocal, so the lines are **perpendicular**

9. Line C (1, 2) & (5, 4); Line D (0, 3) & (2, 4)

10. (0, −5) and (2, −4); (−1, −5) and (1, −6)

11. (0, 2) and (−4, 8); (−4, 0) and (4, −12)

**Write equations for the following:**

12. a. Write any equation that would be **parallel** to the line $y = -\frac{1}{2}x + 6$. _____

b. Write an equation from 12a that passes through the point (10, 4). _____

13. a. Write any equation that would be **parallel** to the line $2y = 3x - 8$. _____

b. Write an equation from 13a that passes through the point $(6, -1)$. _____

14. a. Write any equation that would be **perpendicular** to the line $y = -\frac{1}{2}x + 6$. _____

b. Write an equation from 14a that passes through the point (10, 4). _____

15. a. Write any equation that would be **perpendicular** to the line $2y = 3x - 8$. _____

b. Write an equation from 15a that passes through the point $(6, -1)$. _____

**Solve for x.**

16. $3(x + 6) = x + 2$

17. $\frac{1}{3}x + 9 = 2(22 - x)$