U1 L3 Linear Equations in Two Variables — Practice

Name: _____ HR: _____

Group A — Finding Slope from Two Points

Find the slope of the line through each pair of points. If the slope is undefined, say so.

1. (1, 2) and (4, 8)

2. (−3, 5) and (2, −5)

3. (0, −4) and (6, −4)

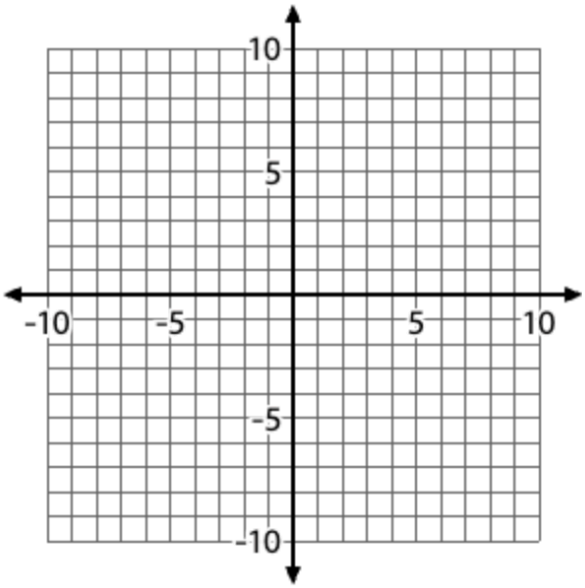
4. (3, 1) and (3, 7)

Group B — Graphing with Slope-Intercept Form

Identify the slope and y-intercept, then graph each line on its grid.

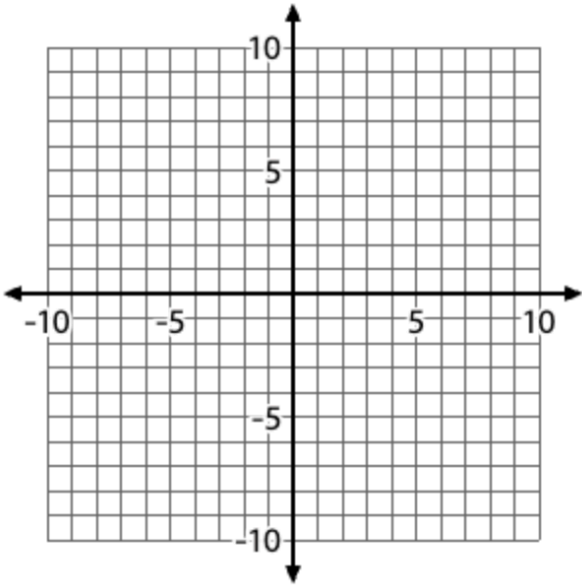
5. y = −2x + 3

y-intercept: (____, ____) slope: m = ____



6. y = ½x − 4

y-intercept: (____, ____) slope: m = ____



Rewrite in slope-intercept form to identify the slope and y-intercept — or explain why it can't be done.

7. 2x − 3y = 6

slope: ____ y-intercept: ____

8. x = −6

slope: ____ y-intercept: ____

Group C — Writing Equations of Lines

Write the slope-intercept form of the equation of each line. Show your point-slope step.

9. Slope 4, through (2, 3)

10. Slope −1, through (−3, 5)

11. Through (1, 4) and (5, 12)	**12.** Through (−2, 7) and (4, −5)

Special cases: a slope of 0 gives a horizontal line; an undefined slope gives a vertical line.

13. Slope 0, through (4, 2)	**14.** Slope undefined, through (−4, 1)

Group D — Parallel and Perpendicular Lines

For each, find the slope-intercept equation of the line through the given point that is (a) parallel to and (b) perpendicular to the given line.

15. Point (0, 5); given line $y = 3x - 1$	**16.** Point (1, 1); given line $2x + y = 6$

Group E — Mixed Applications

Show your work.

17. A printing press was worth \$8,000 when new and depreciates \$500 per year. Write a linear equation for its value V after t years, then find its value after 6 years.	**18.** A city's population is modeled by $P = 1{,}200t + 45{,}000$, where t is years since 2010. Estimate the population in 2018 (t = 8).
19. A product is worth \$3,000 in 2016 and is expected to decrease in value by \$150 per year. Write a linear equation for its value V in terms of the year t (let t = 16 represent 2016).	**20.** A sandwich shop buys a used pizza oven for \$875. After 5 years, the oven's value will be \$0 and it will be replaced. Write a linear equation for its value V during those 5 years.