UNIT 1B • LESSONS 1–3 REVIEW **Name: _____ HR: _____**

Directions: Show substitution, calculations, and graphing work. Write final answers with correct notation.

QUICK REVIEW — Skills from earlier lessons

R1. Solve: $3(2x - 1) = 21$	R2. Solve: $5 - 2x \geq 13$	R3. Simplify: $4(2x - 3) - 3x$

LESSON 1 — Function Notation and Modeling

1. Given $f(x) = -3x + 7$, find $f(-4)$. Show substitution.	2. Given $g(x) = x^2 - 2x + 1$, find $g(-3)$. Show substation.
3. Given $h(x) = 2x - 5$, find and simplify $h(x + 4)$.	4. Given $p(x) = x^2 + 3$, find $p(x - 2)$. Do not simplify.
5. A parking garage charges \$6 to enter plus \$2.50 per hour. Let C(t) be the total cost for t hours. Write C(t) and evaluate C(4).	6. A tank starts with 90 liters and loses 6 liters each minute. Write V(t), evaluate V(8), and state a reasonable domain until empty.

LESSON 2 — Slope and Average Rate of Change

7. Find the slope through $(-4, 2)$ and $(2, 8)$. Describe the direction.	8. Find the slope through $(3, -5)$ and $(3, 4)$. Classify the line.
9. Find the slope using the table: x | $f(x)$ 0 | 7 2 | 3 5 | -3	10. Find average rate of change of $f(x) = x^2 - 4x + 2$ from $x = 1$ to $x = 5$.

UNIT 1B • LESSONS 1–3 REVIEW (BACK) **Name: _____**

LESSON 2 — Rate of Change in Context

11. A candle is 18 cm tall and burns at a constant rate. After 4 hours, it is 14 cm tall. Find and interpret the rate of change, including units.

Write a function H(t) where H is the height of the candle in cm and t is the time it has been burning in hours.

12. The water in a pond is modeled by $W(t) = 80 - 6t + t^2$. Find the average rate of change from t = 1 to t = 4. State whether the amount increased or decreased on average.

LESSON 3 — Graphing Linear Equations

For problems 13–18, graph each line on your own coordinate grid. Identify two points used.

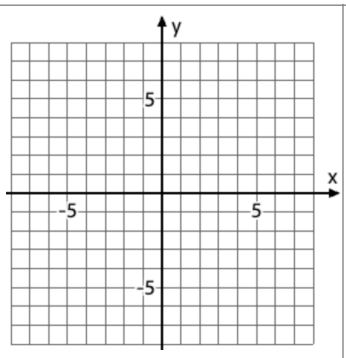
13. $y = 2x - 3$

Slope: _____

y-intercept: _____

Two points:

_____



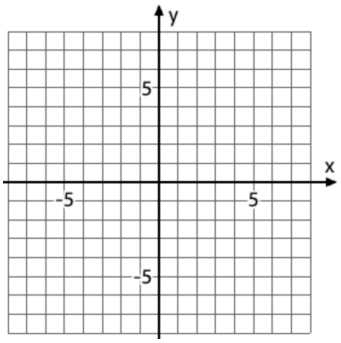
14. $f(x) = -\frac{1}{2}x + 4$

Slope: _____

y-intercept: _____

Two points:

_____

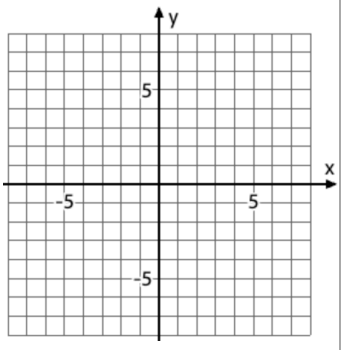


15. $2x + y = 6$

Rewrite in slope-intercept form first.

Two points:

_____

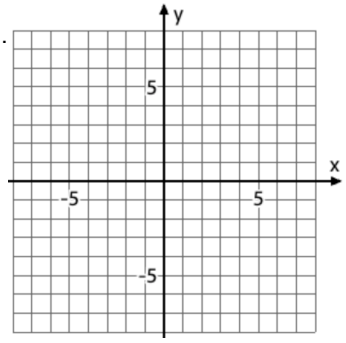


16. 3x + 2y = 12

Find both intercepts, then graph.

x-int: _____

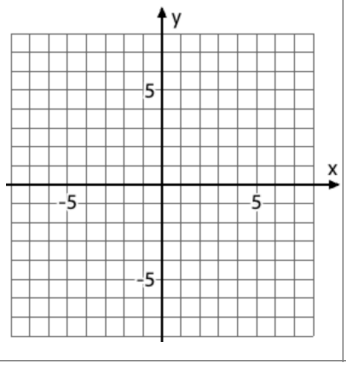
y-int: _____



17. Graph x = −2.

Slope: _____

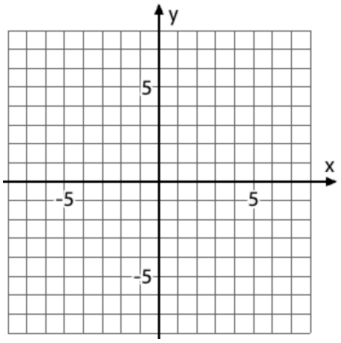
Type of line: _____



18. Graph y = 5

Slope: _____

Type of line: _____



APPLICATIONS — Write the function first

19. A fishing line is 120 inches long and stretches 0.35 inches per pound. **Write** $L(w)$**.** Find L(20). Identify the slope and its meaning.

20. A student has $35 and earns $15 per hour. Write $M(h)$. How many hours until the student has $140? **Show an equation** and solve.