

Chapter 6 — Graphing Linear Equations and Slope

Worksheet C: Mixed Application

Name: _____ Grade: _____ Date: _____

1. A phone plan costs \$30 per month plus \$5 per GB. Write C in terms of g . Find the cost for 12 GB. Then find g if the bill is \$75.

2. A line passes through $(0,4)$ and has slope $-1/2$. Write the equation. Then give two more points that lie on the line.

3. A plant is 3 cm tall and grows 2 cm per day. Write H in terms of d . Find height after 10 days.

4. Are $y=2x+1$ and $y=-1/2x+5$ parallel, perpendicular, or neither? Explain.

5. A worker starts with \$200 saved and saves \$80 per week. Write S in terms of w . Find weeks to reach \$1,000.

6. Find the slope between $(-3, 8)$ and $(6, -1)$. Then describe whether the line rises or falls from left to right.

7. Write an equation for a line parallel to $y = -3x + 2$ that passes through the y-axis at 4.

8. Write the equation of the vertical line through $(3, 4)$. Explain why it cannot be written as $y = mx + b$.

9. A delivery service charges \$12 plus \$0.75 per kilometre. Write C in terms of k . Find cost for 20 km.

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10. Find the slope of the line through $(2,3)$ and $(5,12)$. Then state whether the line rises or falls from left to right.

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11. Write an equation for a line perpendicular to $y=3/4x-1$ that passes through $(0,2)$.

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12. A student says the equation $y=-6+2x$ has slope -6 and y -intercept 2 , because that is the order the numbers appear. Identify the student's error, then correctly identify the slope and y -intercept.
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13. Which line is steeper: $y=-5x+2$ or $y=3x-8$? Explain.

14. Non-Routine: A student says that the line $y=4x-2$ has a slope of -2 because -2 is the number attached to the line after the x-term. Is the student correct? Identify the slope and y-intercept, then list three points that lie on the line.

15. Non-Routine: A student finds the slope through (1,4) and (5,12) as $m=(12-4)/(1-5)=8/(-4)=-2$. The student says the line falls from left to right. Is the student correct? Identify the exact error, find the correct slope, and explain how the line changes from left to right.
