

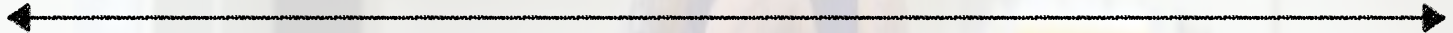
N3CS19

Practice Set 42: SLOPI!

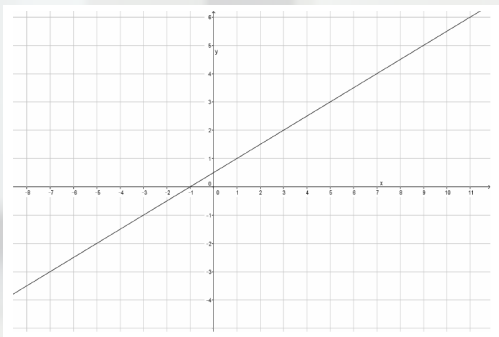
Instructions: Answer each question on loose leaf, quad-ruled (graph paper), headed properly and written in lead-graphite. Remember to fold paper along the center, work exercises in order top to bottom, left column then right column. Staple multiple pages Evaluate: round your solutions to the nearest 10th



1. $18.65 + 9.77$
2. $20.04 - 7.89$
3. $(27.9)(38.4)$
4. $1989 \div 28$
5. Evaluate; write solutions as either a mixed number if the decimal repeats, or a terminating decimal.
 - a) $13 - 4\frac{3}{8}$ b) $9\frac{5}{6} - 6\frac{8}{9}$ c) $6.8 - 2.\bar{3}$
6. Re-write each expression using the Definition of Subtraction, then add:
 - a) $17 - (-29) =$ b) $32 - 49 =$ c) $-18 - (-35) =$ d) $-28 + (7 - 13) =$ e) $53 - (42 - 66)$
7. Simplify:
 - a) $5 - 6(x - 2)$ b) $17 - 8(4 - 5x)$ c) $9x - 8(7 - 6x)$ d) $13x - 4(12 - 5x) + 23$
8. Solve for the unknown: express solutions as either mixed numbers if the decimal repeats, or terminating decimals.
 - a) $\frac{4}{3}n - 6 = -1$ b) $12 - \frac{6}{7}p = -2$ c) $\frac{6}{11}t - 4 = -12$ d) $15 - 8q = -12$



9. Identify the x- and y-intercepts of the given equations of a line.
 - a) $x - y = 10$ b) $y = -2x + 4$ c) $4x - 3y = 12$ d) $\frac{x}{3} + \frac{y}{2} = 6$
10. Graph the equations from #9 using the axis intercepts.
11. Write the following equations in slope-intercept form.
 - a. $x + 4y = 8$ b. $3y - 4x = 3$ c. $3x + 2y = -2$ d. $4x - 3y = 0$
12. Graph the equations from #11 using the y-intercept and 'slope' from point to point.
13. Use the slope formula, $m = \frac{y_2 - y_1}{x_2 - x_1}$, to find the slope between the given two points.
 - a) $(-6, -2); (-2, -8)$ b) $(-6, 0); (3, 6)$ c) $(-5, 5); (6, 2)$ d) $(2, -4); (2, -9)$
14. From the slope of letter 'd', what can we say generally about the slope of a vertical line?
15. Determine the slope of the line in the figure:



16. The amount that a spring stretches is directly with the height from which it is dropped. If a spring is stretched 10 cm by a weight of 8kg, how much will it be stretched by a weight of 3 kg?
17. Mr. Ford's Elite Dangerous ship, the *Akili Meator*, has reached speeds of 512c, or 512 times the speed of light. What is this speed in m/s, in scientific notation? *Do your math in scientific notation!*
18. Solve: $8(x - 3) + 14 = 2(4x + 5)$

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19. Solve: $7(-8x + 6) = -5x + 4 - 3x$

20. A square has an area of $676m^2$; what is the square's perimeter?

21. A cube has a volume of $64in^3$; what is the cube's surface area?

22. Write as exponents positive: $\frac{-32u^3v^4}{-12u^{-6}v^8}$

23. Multiply; write as exponents positive: $8a^2b^{-3}(4a^{-2}b)^4$

24. In scientific notation, what is the difference of $9.14 \cdot 10^6 - 3.989 \cdot 10^5$?

25. Estimate the quotient: $\frac{\sqrt{340}}{\sqrt{90}}$

26. Estimate the difference: $\sqrt[3]{300} - \sqrt[3]{140}$

27. Solve $L = \frac{1}{2}\rho v^2 SC$ for 'v' in terms of L, ρ, S, C .



28. In the Image at right Mr. Ford has discovered a class Y brown dwarf that is 1,976 million years old. You've learned in Science that the earth is over 4,600 million years old.

- Write both of these values in Scientific notation
- How many times older is the earth to this brown dwarf?

