

PreCalc Test #1 Review

Please complete 2 problems from each section section on your review (**It will count as a quiz grade**). Your review is due the day of the test, (A day Sept. 14th, B day Sept. 15th). You are responsible for this content whether or not you were in this class at the time. See www.CalcChat.com for worked-out solutions to odd numbered exercises.

1.1

Finding the Slope of a Line In Exercises 1–8, plot the two points and find the slope of the line passing through the points.

- | | |
|---|---|
| 1. $(-3, 2), (8, 2)$ | 2. $(3, -1), (-3, -1)$ |
| 3. $(7, -1), (7, 12)$ | 4. $(8, -1), (8, 2)$ |
| 5. $(\frac{3}{2}, 1), (5, \frac{5}{2})$ | 6. $(-\frac{3}{4}, \frac{5}{6}), (\frac{1}{2}, -\frac{5}{2})$ |
| 7. $(-4.5, 6), (2.1, 3)$ | 8. $(-2.7, -6.3), (0, 1.8)$ |

The Point-Slope Form of the Equation of a Line In Exercises 9–16, (a) use the point on the line and the slope of the line to find an equation of the line, and (b) find three additional points through which the line passes. (There are many correct answers.)

- | <i>Point</i> | <i>Slope</i> |
|------------------------|--------------------|
| 9. $(2, -1)$ | $m = \frac{1}{4}$ |
| 10. $(-3, 5)$ | $m = -\frac{3}{2}$ |
| 11. $(0, -5)$ | $m = \frac{3}{2}$ |
| 12. $(0, \frac{7}{8})$ | $m = -\frac{4}{5}$ |
| 13. $(-2, 6)$ | $m = 0$ |
| 14. $(-8, 8)$ | $m = 0$ |
| 15. $(10, -6)$ | m is undefined. |
| 16. $(5, 4)$ | m is undefined. |

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Finding the Slope-Intercept Form In Exercises 17–24, write an equation of the line that passes through the points. Use the slope-intercept form, if possible. If not possible, explain why. Use a graphing utility to graph the line (if possible).

- | | |
|--|--|
| 17. $(2, -1), (4, -1)$ | 18. $(0, 0), (0, 10)$ |
| 19. $(7, \frac{11}{3}), (9, \frac{11}{3})$ | 20. $(\frac{5}{8}, 4), (\frac{5}{8}, -6)$ |
| 21. $(-1, 0), (6, 2)$ | 22. $(1, 6), (4, 2)$ |
| 23. $(3, -1), (-3, 2)$ | 24. $(-\frac{5}{2}, 1), (-4, \frac{2}{9})$ |

Equations of Parallel and Perpendicular Lines In Exercises 31 and 32, write the slope-intercept forms of the equations of the lines through the given point (a) parallel to the given line and (b) perpendicular to the given line. Verify your result with a graphing utility (use a *square setting*).

<i>Point</i>	<i>Line</i>
31. $(3, -2)$	$5x - 4y = 8$
32. $(-8, 3)$	$2x + 3y = 5$

Testing for Functions Represented Algebraically In Exercises 35–42, determine whether the equation represents y as a function of x .

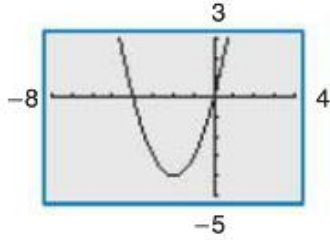
- | | |
|-----------------------|----------------------|
| 35. $16x^2 - y^2 = 0$ | 36. $x^3 + y^2 = 64$ |
| 37. $2x - y - 3 = 0$ | 38. $2x + y = 10$ |

Evaluating a Function In Exercises 43–46, evaluate the function at each specified value of the independent variable, and simplify.

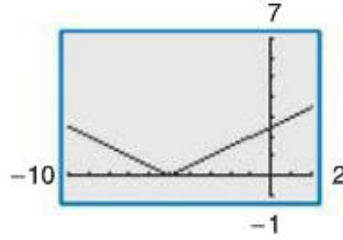
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|-----------------------------|----------------|
| 43. $f(x) = x^2 + 1$ | |
| (a) $f(1)$ | (b) $f(-3)$ |
| (c) $f(b^3)$ | (d) $f(x - 1)$ |
| 44. $g(x) = \sqrt{x^2 + 1}$ | |
| (a) $g(-1)$ | (b) $g(3)$ |
| (c) $g(3x)$ | (d) $g(x + 2)$ |

Vertical Line Test for Functions In Exercises 63–66, use the Vertical Line Test to determine whether y is a function of x . Describe how to enter the equation into a graphing utility to produce the given graph.

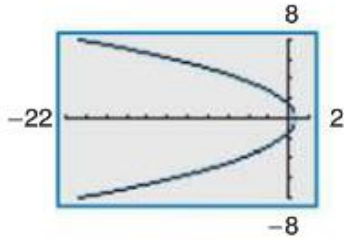
63. $y - 4x = x^2$



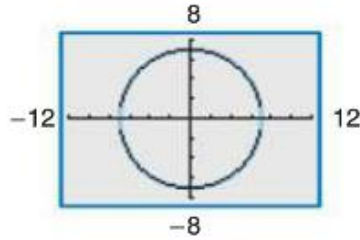
64. $|x + 5| - 2y = 0$



65. $3x + y^2 - 2 = 0$



66. $x^2 + y^2 - 49 = 0$



1. Simplify $\left(4x^{\frac{1}{2}}\right)^3 \div \left(9x^{\frac{1}{3}}\right)^{\frac{3}{2}}$

1. _____

2. (1 point) Simplify $(-4)^0$.

a. 1

c. -4

2. _____

b. $-\frac{1}{4}$

d. 0

3. (1 point) Simplify $m^3 \cdot y^6 \cdot m^2$.

3. _____

a. $m^5 \cdot y^6$

c. $m \cdot y^6$

b. $(m \cdot y)^{11}$

d. $m^6 \cdot y^6$

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4. Simplify $\frac{2x^4y^{-4}z^{-3}}{3x^2y^{-3}z^4}$

4. _____

5. (1 point) Which expression is equivalent to $(3x^2)^3$?

5. _____

a. $9x^5$

c. $27x^5$

b. $9x^6$

d. $27x^6$