

COLLEGE ALGEBRA
Review and Lines

1. Find the distance between
(-1,4) and (-2,-5).

2. Find the midpoint of the line
segment connecting (-1,4) and
(-2,-5).

3. Use a calculator to approximate
the answer to the nearest
hundredth.

$$\frac{-2.34 + \sqrt[4]{7}}{7.23 - 8.22}$$

4. $\{-5, -2, 0, \frac{3}{7}, 4, \sqrt{7}\}$

List the numbers in the above set
that are

- a. whole numbers
- b. integers
- c. rational numbers
- d. real numbers

5. $\{x \mid x > 2\}$

a. Write the above set using
interval notation.

b. Graph the above set on the
number line.

6. Do these represent functions?
(yes/no)

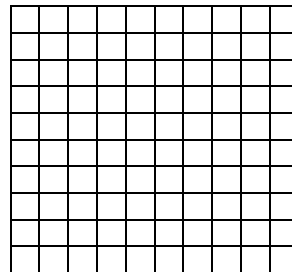
a. $\{(1,2), (1,5)\}$

b. $3x+4y = 8$

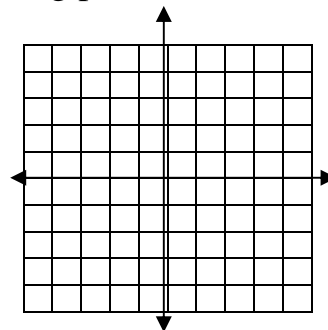
7. Is this the graph of a function?

8. $f(x) = x^4 - 2x$
Find $f(-1)$.

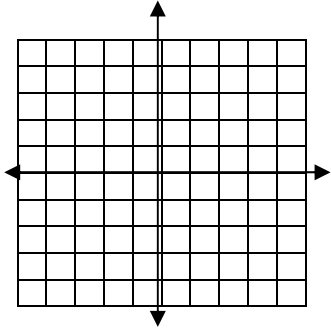
9. Find the
a. domain
b. range
of this graph:



10. Graph $2x+y = 4$ by hand,
showing points used.



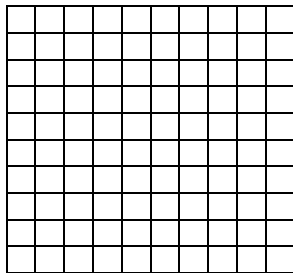
11. Graph $y = 2$



12. Graph by hand or use your graphing calculator.

$$y = -3x + 9$$

What is the zero of this function?



13. Find the slope of a line through $(-3, -1)$ and $(4, -2)$.

14. Write the equation of a line through $(-2, 5)$ with slope $1/5$. Change to slope-intercept ($y =$) form.

15. Show some work you would need to do before graphing this on your graphing calculator. Do not graph.

$$-x + 4y = 18$$

16. Find the slope of these lines.

a. $x = 3$

b. $3x + 5y = 8$

17. Find the slope of a line

a. parallel to $-2x + 3y = 4$

b. perpendicular to $-2x + 3y = 4$

18. Solve for x:

$$5(x+2) = 4x + 10 + x$$

19. Solve for x:

$$2(4x + 2) - 2(x+3) = 5x + 7$$

(Optional: check by graphing with your calculator.)

20. Solve for x. State answer in interval notation.

$$-x - 4 < 10$$

21. Solve for x. State your answer in interval notation.

$$1 \leq 2x + 3 \leq 9$$

22. Solve for k:

$$kx + 3 = kz$$

23. (Show your equation, solve, and answer the question.)

The perimeter of a triangle is 34 inches. The middle side is twice as long as the shortest side. The longest side is 2 inches less than three times the shortest side. Find the lengths of the three sides.

24. How many liters of 20% solution of a chemical should be mixed with 15 liters of a 50% solution to get a mixture that is 30% chemical?

25. 31. The distance traveled by a ball dropped from the top of the Washington monument varies directly as the square of the time since its release. If a ball has fallen 144 feet in 3 seconds, how long (to the nearest tenth) will it take to fall the 444 feet to the bottom of the monument?

Take home problem:

24. Cellular Two offers a phone rate of \$30 per month plus \$.45 per minute. Mideastern Bell offers a rate of \$25 per month plus \$.50 per minute. To get the best deal using Cellular Two, how many minutes of telephone use per month would be required?

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