

Links to purplemath for more background on how to solve each problem

1. If $a = -3$, $b = -3$, and $c = 2$, find the value of,

$$\frac{4ac - b}{c - a}$$

<http://www.purplemath.com/modules/evaluate.htm>

2. Find an equation of the line that passes through the point $(x, y) = (3, 1)$ and is perpendicular to the line $2x + 3y = 12$

<http://www.purplemath.com/modules/strtlneq.htm>

3. Simplify the expression $7x - 2x - 9x$.

<http://www.purplemath.com/modules/polydefs2.htm>

4. Simplify, $-3(2x + 5) - 4(3x - 2)$.

<http://www.purplemath.com/modules/numbprop.htm>

<http://www.purplemath.com/modules/polyadd.htm>

5. Solve for m , $4m - (7m + 6) = -m$.

<http://www.purplemath.com/modules/solvein.htm>

6. Solve for y , $4y + 12 < 6y$.

<http://www.purplemath.com/modules/ineqlin.htm>

7. Multiply to expand: $-4x^2y(6x^3y^2 - 5xy^6)$.

<http://www.purplemath.com/modules/polymult.htm>

8. Add: $(x^2 + 3x + 7) + (4x^3 - 6x^2 - 5x + 4)$.

<http://www.purplemath.com/modules/polyadd.htm>

9. Multiply: $(4x - 7)(3x + 2)$.

<http://www.purplemath.com/modules/polymult.htm>

10. Write the expression in its simplest form and without negative exponents:

$$\left[\frac{x^{-2}y^3}{x^{-5}y^{-4}} \right]^{-2}$$

<http://www.purplemath.com/modules/exponent.htm>

11. Write the following as a single fraction:

$$\frac{1}{2x} + \frac{2}{3y} - \frac{5}{6xy}$$

<http://www.purplemath.com/modules/rtnladd.htm>

12. Solve for z , $2z^2 + z - 28 = 0$.

<http://www.purplemath.com/modules/factquad.htm>

13. Solve for y .

$$x = \frac{4(y - z)}{k}$$

<http://www.purplemath.com/modules/solveit.htm>

14. Simplify $-4/\sqrt{12}$.

<http://www.purplemath.com/modules/radicals.htm>

15. Draw a graph of $y = -2x + 3$ in the space below.

<http://www.purplemath.com/modules/graphlin.htm>

16. Draw a graph of $y = x^2 - 5$ in the space below.

<http://www.purplemath.com/modules/grphquad.htm>

17. For the equation of a line $y = -3x - 3$, if $x = 4$, what is y ?

<http://www.purplemath.com/modules/evaluate.htm>

18. Solve for x , $32^x = 16^{2x-1}$.

<http://www.purplemath.com/modules/solvexpo.htm>

19. Solve these two equations simultaneously for x and y : $3x + 2y = -13$ and $xy = 6$.

<http://www.purplemath.com/modules/syseqgen.htm>

20. Solve the following inequality

$$2x^2 + 3x - 35 \leq 0$$

<http://www.purplemath.com/modules/inequad.htm>

21. Solve the following inequality

$$\left| \frac{x + 7}{5} \right| > 2$$

<http://www.purplemath.com/modules/solveabs.htm>