

Sample Assessment Items for Math 010

1. Solve: $5(x + 5) - 7 = -7x + 18 + 12x$
2. Solve: $-(5 + x) + 3 - 4x > 8$
3. Solve the system of linear equations:
$$\frac{1}{5}x - \frac{1}{4}y = 3$$
$$4x - 5y = 20$$
4. Solve: $1 - \frac{2x-6}{x^2-9} = -\frac{4}{x+3}$
5. Solve: $x(x - 3) = 4$
6. Solve: $a^2 + 18 = 10a$
7. Solve: $(x - 3)^2 = 24$
8. Solve for c : $\frac{a}{c} = \frac{b}{d}$
9. Solve for y : $-5x + 7y = 3$
10. Graph the line $3x - 4y = 24$.
11. Find the x and y -intercepts of the line $2x + 7y = 10$.
12. Find the equation of the line with a slope of $\frac{1}{2}$ containing the point $(-2,4)$.
13. The linear equation $y = 0.25x + 7$ can be used to model the cost of a textbook (in dollars), y , containing x pages. What does the slope of the graph represent?
14. A rectangular carpet has a perimeter of 204 inches. The length of the carpet is 30 inches more than the width. Find the dimensions of the carpet.

15. The tuition for a class at a local university increased 6%. The new tuition cost is \$5830. What was the cost for tuition before the increase?
16. How many liters each of a 5% silver iodide solution and a 20% silver iodide solution must be mixed to get 30L of a 10% solution?
17. Carly and Evie are riding bicycles in the same direction. Carly rides at a speed of 3 mph while Evie rides at a speed of 9 mph. If they start at the same place (and at the same time), how long until they will be 30 miles apart?
18. Simplify: $(2x^2y^{-1})^{-3} \cdot 2x^4$
19. Factor: $6x^2 + 17x - 3$
20. Factor: $32 - 2x^2$
21. Simplify: $(-5x^5y^3 + 3xy) - (2x^5y^3 + 6xy)$
22. Multiply: $(5x - 2)(3x^2 - 4x + 2)$
23. Subtract: $\frac{a+8}{a} - \frac{y-8}{y}$
24. Simplify: $\frac{x^2+5x-6}{x^2-1} \cdot \frac{x^2+x}{x^2+12x}$
25. Simplify: $\frac{\frac{x-y}{y^2}}{\frac{x^2}{y^2} - 1}$
26. Find the domain of $f(x) = \frac{x-3}{x+4}$
27. Simplify: $5\sqrt{27x^4} - x\sqrt{75x^2}$. Assume x represent a positive real number.

28. Simplify: $(27x^3y^5)^{\frac{1}{3}}$

29. Expand: $(\sqrt{x} + 7)^2$. Assume x represent a positive real number.

30. Simplify: $\sqrt{6x} (3 + \sqrt{2x})$. Assume x represent a positive real number.

31. Rationalize and simplify: $\frac{3+\sqrt{2}}{\sqrt{3}}$