
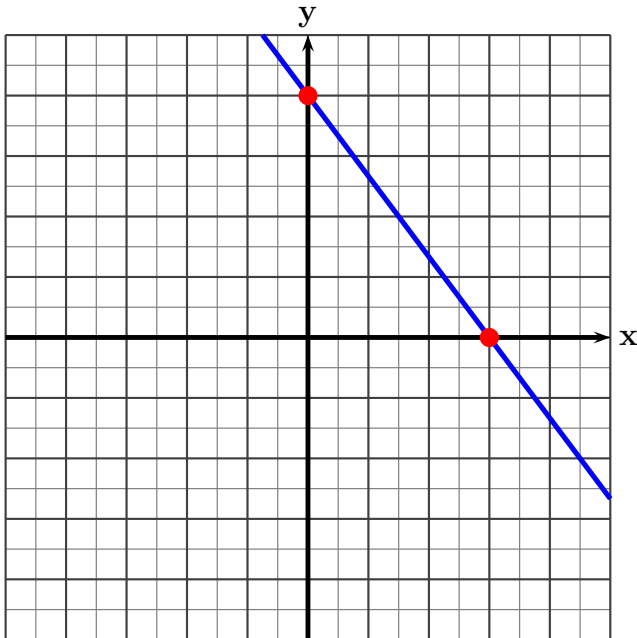


## Answers to the First Practice Exam

1. Evaluate:  $2 \cdot (-4 - 3) - 3^2 \div 3 \cdot 3 = -23$
2. Let  $f(x) = x^3 - 7x + 4$ . Find both  $f(0)$  and  $f(-2)$ .  $f(0) = 4, f(-2) = 10$
3. Solve for  $x$ :  $-2(4x - 5) = 3(2x + 6) \quad x = -\frac{4}{7}$
4. Solve for  $y$ :  $3x - 5y = 15 \quad y = \frac{3x}{5} - 3$
5. Solve  $-5x + 2 > 11$  and  $x < -\frac{9}{5}$ 
  - (a) graph the solution set
 


  - (b) express the solution set in interval notation.  $\left(-\infty, -\frac{9}{5}\right)$
6. Solve for  $x$ :  $|4x - 1| = 2 \quad x = \frac{3}{4} \quad \text{or} \quad x = -\frac{1}{4}$
7. Sketch the graph of  $4x + 3y = 12$ . Show the  $x$  and  $y$  intercepts.

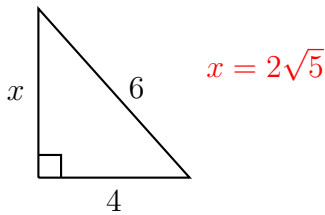


$x$	$y$
$0$	$4$
$3$	$0$

8. Find an equation for the line that passes through the points  $(2, -3)$  and  $(5, 8)$ .

$$y = \frac{11x}{3} - \frac{31}{3}$$

9. Solve for  $x$  and  $y$ :  $\begin{cases} 3x + y = -14 \\ 4x + 3y = -22 \end{cases} \quad (-4, -2)$
10. Multiply and simplify:  $(x - 1)(x^2 + x + 1) \quad x^3 - 1$
11. Simplify:  $\left(\frac{2xy^2}{z}\right)^3 (xyz^2)^2 \quad 8x^5y^8z$
12. Simplify:  $\frac{9x^3 - 42x^2}{3x^2} \quad 3x - 14$
13. Divide  $x^2 - 2x - 3$  by  $x - 3$ .  $x + 1$
14. Solve for  $x$ :  $3x^2 - x - 2 = 0 \quad x = 1 \quad \text{or} \quad x = -\frac{2}{3}$
15. Factor completely:  $7x^3y^2 - 63xy^2 \quad 7xy^2(x + 3)(x - 3)$
16. Find the missing side length  $x$  and simplify your answer:



17. At 2 PM two buses leave a town heading in opposite directions. If one bus is traveling at 52 mph and the other at 64 mph, what time is it when they are 580 miles apart? **7 PM**
18. If a car gets 28 miles per gallon of gas, how many gallons of gas are needed to travel 40 miles?  $\frac{10}{7}$  gallons
19. Factor:  $a^2b^2 - 3b^2 - 2a^2 + 6 \quad (a^2 - 3)(b^2 - 2)$
20. Simplify:  $-\sqrt{63x^{16}y^2} \quad -3x^8|y|\sqrt{7}$