

Name _____

TAKE HOME FINAL #1

Semester Review WS #1

Will make up 10 points on the final . . . graded on accuracy

1. Evaluate $|-2| \cdot 3^3 - (5-11)^2$
2. Evaluate $\sqrt{81} + 24 \div 6 \cdot 3 - 5^2$
3. How many solutions does this system of equations have? $\begin{cases} 4x - y = 5 \\ y = 3x - 2 \end{cases}$
A) 0 B) 1 C) 2 D) an infinite number
4. How many and what type of solutions does $x^2 - 5x + 16 = 0$ have?
5. Find the value of the discriminant given $x^2 + 3x - 4$
6. A student has some pennies and dimes. All total, he has 21 coins. If he adds them up, he has \$1.56. How many dimes does he have?
A) 20 B) 15 C) 19 D) 6
7. Find the product of $(x+5)(3x^2 - 2x + 3)$
8. Solve $2x^2 + 5x - 23 = 0$. Answer should be in most simplified form.
9. What is the degree and leading coefficient of the polynomial: $-3x^5 + 4x^3 - 2x + 7$
10. Combine and simplify: $2\sqrt{27} - 4\sqrt{75}$
11. Evaluate $a^2 - 4(b^3 - a) + \frac{a}{b}$ if $a = 4$ and $b = -2$
12. Name the sets of numbers that each value belongs to: (a) 4 and (b) $2\sqrt{7}$
13. Solve: $\frac{2}{3} - \frac{1}{6}x = \frac{3}{4}$
14. Find the vertex: $f(x) = 2x^2 - 8x + 3$
15. A plane flies 600 miles upwind in 3 hours. It makes the return trip in only 2 hours. What is the speed of the plane in still air?

16. Solve: $3|2x-4|-4=11$

17. Simplify $\frac{c^{-6}x^{-2}y^3}{x^{-5}y^4(c^2)^0}$

18. Simplify $\frac{8x^3}{x^{-2}} \cdot \frac{3x^2}{4x^4}$

19. In the solution of the system of equations $\begin{cases} 2x+3y=15 \\ x+4y=23 \end{cases}$, $y =$

20. Simplify $\left(\frac{12x^{-4}yz^5}{20x^7y^{-3}z^8}\right)^{-2}$

21. Simplify: $\frac{6+2(6-8)}{5+2 \cdot 3^3}$

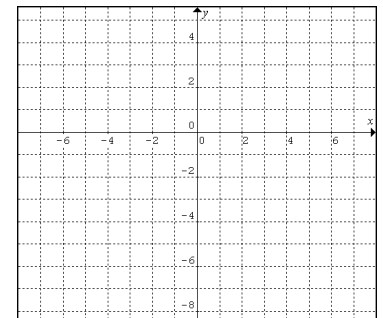
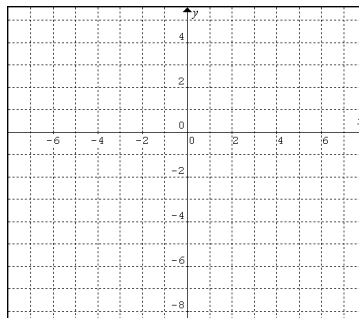
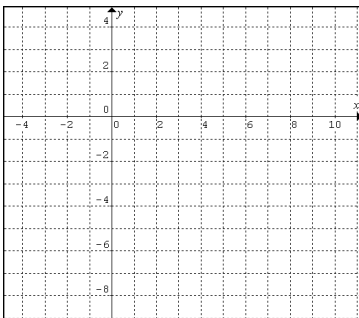
22. Solve $4x^2 - 2x + 2 = 0$. Answer should be in most simplified form.

23. Solve $(x+3)^2 - 8 = 0$. Give the exact answer.

24. Graph $\begin{cases} y < \frac{1}{3}x - 4 \\ x + 2y \leq 5 \end{cases}$

25. Graph: $3x - 2y = 6$

26. $-2y \geq 4x - 10$



27. Given the two points $(3, -4)$ and $(-1, 6)$
find the equation of the line in:

- (a) Write in point-slope form
- (b) Write in slope-intercept form
- (c) Write in standard form

28. Graph $y \geq -2x^2 + 4x + 5$

