

24. $3x < (6 - x) \leq 10 + x$

25. You are planning a seminar and have a \$500 budget. You are renting 3 meeting rooms at \$35 each and will pay each of your 2 speakers a \$110 honorarium. You have also spent \$46.17 on office equipment and advertising. You would like to spend the remaining money on refreshments for the coffee break. How much money will you have available for the coffee break?

16. Solve for u and v :

$$4u + 2v = 8$$

$$2u - 5v = 16$$

17. Solve for x : $7x^2 + 10 = 73$

18. Solve for x : $2x^2 + 8x - 10 = 0$

19. Let $y = 4x^2 - 5x + 3$

(a) Find y when $x = 2$

(b) Find y when $x = -3$

6. Write as a decimal and as a percentage: $\frac{8}{25}$

7. Simplify: $5(5^2 + 5)$

8. Simplify: $\sqrt[3]{27y^6}$; HINT: $x^3 = 27y^6$; FIND x .

9. Simplify: $\sqrt{9x^2 + 30x + 25}$

10. Expand: $(4x-1)(2x^2+5)$

11. Simplify (assuming $z \neq 0$): $\frac{-3z^5 + 6z^2}{z^4 - 2z}$

ALGEBRA PRACTICE EXAM

Name: _____

Instructions:

Do not use a calculator. Answer the questions in the spaces provided. Write your answers in the simplest form possible. You have two hours to complete the exam, **BUT YOU HAVE ONLY 45 MINUTES IN CLASS!**

1. Order the following numbers from *greatest to least*: 3, -14, 10, -50, $\frac{3}{4}$
2. Order the following numbers from *least to greatest*: $-e$, $|-2|$, e , 2.71
(The value of e is 2.71828...)
3. Evaluate: $5 + 0.011 + (-0.47)$
4. Evaluate: $\sqrt{16}$
5. 40% of the population of Factoryville works in the manufacturing industry. If 20% of factory workers and 5% of non-factory workers in Factoryville develop back pain, what is the percentage of the total population of Factoryville that develops back pain?

12. Simplify (assuming $x \neq 0$): $\frac{9x^2 - 1}{3x - 1}$

13. Simplify: $\frac{\left(\frac{3}{8y}\right)}{\left(\frac{5}{3y}\right)}$

14. Solve the following system of equations for x and y :

$$6y + 3 = 27$$

$$3x = \frac{y + 14}{2}$$

15. Let $x = 40$, solve for y : $y - 6 = \left(\frac{x}{6}\right)^2 - 14$

20. Write the equation of the line with slope equal to 7 and y-intercept equal to -4.3 .

21. Simplify the following (express your answer as an integer or fraction): $4^2, 4^{-2}, 4^{1/2}, 4^0$

HINT:
 $4^{1/2} = \sqrt{4}$

22. Simplify: $(4x^4y^6)^{1/2}(x^2y)^{-3}$; HINT: $x^{1/2} = \sqrt{x}$

23. $|2x + 5| > 10$