Please remember to show ALL of your work on every problem.

1. If $8x + 5x + 2x + 4x = 114$, the $5x + 3 =$

Answer:

2. Solve the following equation for A: $2A/3 = 8 + 4A$

Answer:

3. Solve the following equation: $7x + 2(x + 9) = -9$

Answer

4. Perform the indicated operations and simplify:

$$\left(9x^2 + 2x + 3\right) - \left(4x^2 + 3x - 7\right)$$

Answer:

5. Perform the indicated operations and simplify:

$$(5x-3)(8x^2-4x+15)$$

Answer:

6. Factor completely. Show work following the method discussed in Sections 6.1 and 6.3 of our text, and show the check by re-multiplication of the factors. If the polynomial is not factorable, write "prime."

$$5x^2-15x-200$$

Answer:

7. Answer each of the questions below:

    a) Write the number in scientific notation: 2,354,107

    b) Write the number in scientific notation: 0.0512

    c) Write the number in standard notation, without exponents: 5.129×10^7

d) Write the number in standard notation, without exponents: 3.622×10^{-3}

e) Perform the indicated operations and write the answer in scientific notation:

$$\left(5.2 \times 10^3\right)\left(4.5 \times 10^5\right)$$

8. Perform the indicated operations and simplify:

$$\left(5x - 3\right)\left(8x^2 - 4x + 15\right)$$

Answer:

9. Solve the equation by the method of factoring. Use the factoring technique discussed in Section 6.4 of our text, and solve following the methods discussed in Section 6.7.

$$7x^2 - 29x = 30$$

Answer:

10. Factor this problem.

$6x^4 - 10x^3 + 3x^2$

Answer:

11. Factor this problem.

$2x^2 + 2x - 8$

Answer:

12. Factor this problem.

$d^2 + 7d + 10$

Answer:

13. Factor this problem.

$a^4 + 2a^2 - 35$

Answer:

14. Factor this problem.

$9x^2 + 18x + 8$

Answer:

15. Factor this problem.

$49 - 42x + 9x^2$

Answer:

16. Factor this problem.

$(49x^4 - 9x^6)$

Answer:

17. Divide and simplify.

z to the negative 6 power and this is divided by z to the negative second power.

z^{-6}/z^{-2}

18. Convert the number in the sentence into scientific notation.
Population of the United States in 2005 was about 296 million people. (1 million = 10 to the sixth).

19. Add:

$$(9x^8 - 7x^4 + 2x^2 + 5) + (8x^7 + 4x^4 - 2x) + (- 3x^4 + 6x^2 + 2x - 1)$$

(9x to the 8th minus 7x to the 4th plus 2x square + 5) + (8x to the 7th plus 4x to the 4th minus 2x) + (negative 3x to the 4th + 6x square + 2x – 1)

20. Multiple:

$$(x + 1)(x^3 + 7x^2 + 5x + 4)$$

21. Divide:

$$(x^6 - 13x^3 + 42) \div (x^3 - 7)$$

(x to the 6th minus 13x cubed plus 42) divided by (x cubed minus 7)

22. The _____ of the line y = mx + b is m.

23. Subtract $(2x^4 + x^3 - 8x^2 - 6x - 3) - (6x^4 - 8x^2 + 2x)$

(2x to the 4th plus x cubed minus 8x square –minus 3) minus (6x to the 4th minus 8x square plus 2x)