

BASIC ALGEBRA FINAL EXAM D* **NAME** _____

SHOW ALL WORK ON THIS TEST OR ON SEPARATE PAPER. Circle answers.

1. $(-6+0) \div 6$

2. Let $x=-6$ and $y=5$ 3. Solve for x :
find the value of $-3x - 12 = -3(4 + x)$
 $x^2 - xy - y^2$

4. Find three consecutive numbers such that the sum of the numbers is 99 more than the third.

5. The perimeter of a triangle is 150 meters. The longest side is twice the shortest side, and the third side is 10 less than the longest side. Find the lengths of the three sides.

6. Solve for x , and graph:

$$-3 \leq \frac{-2x-9}{5} < -1$$

7. Multiply: $(x - 5)(x^2 + 5x + 25)$

In 8 - 10, factor completely.

8. $12x^4y^2 + 36x^2y^4$

9. $x^2 + 18x - 40$

10. $x^3 - 12x^2 - x + 12$

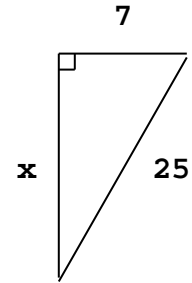
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11. Solve for x:

$$x(x-4) = -3(x - 14)$$

12. Solve for x:



13. Simplify:

$$(3x^2y^{-2})^3$$

14. Calculate and express in scientific notation:

$$\text{a) } \frac{26,000,000}{0.00002} \qquad \text{b) } \frac{0.0000026}{20,000,000}$$

15.
$$\frac{x^2 - 2x - 48}{x^2 - 6x - 16}$$

16.
$$\frac{x^2 - 5x}{x^2 - 25} \div \frac{x^3 + 6x^2}{x^2 - x - 30}$$

17.
$$\frac{5}{48xy} + \frac{7}{8y^2}$$

In 19 - 20, solve for x:

18.
$$\frac{12}{x^2 - 7x + 12} - \frac{4}{x^2 - 8x + 16}$$

19.
$$\frac{x}{4} + \frac{3(x-2)}{2} = 4$$

20.
$$\frac{6}{x-4} = \frac{2x}{x-4}$$

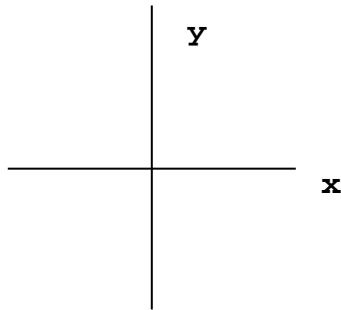
21. If it takes 10 minutes to rake 4 bags of leaves,

a) how many bags can you rake
in 45 minutes?b) how long will it take to rake
30 bags of leaves?

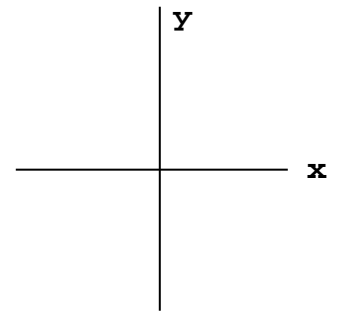
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22. Graph: $y = -\frac{1}{2}x + 4$

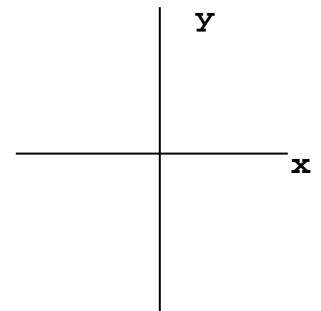


23. Graph: $-3x + 2y = -6$



24. Find the slope between $(4, -6)$ and $(-2, 8)$.

25. Graph: $3x - 2y \geq -6$



26. Solve the system: $5x + 3y = 0$
 $3x + 5y = 32$

27. Simplify: $\sqrt{250}$

28. Simplify: $\sqrt[3]{250}$

29. Simplify: $\sqrt{28x^6y^9}$

30. Simplify:
 $8\sqrt{24} - 3\sqrt{54} - 5\sqrt{6}$

31. Simplify:
 $(6\sqrt{10} + 5\sqrt{6})^2$

32. Calculate the value:
 $(6\sqrt{10} + 5\sqrt{6})^2$