



Dear High School Scholar:

Below you will find your Summer Mathematics Packet. Download the packet and complete the problems. If you are unable to download the packet, you may pick up one in the Main office at NMTCS. Make sure you show your work for each problem. Showing your work is worth 60% and the correct answer is worth 40%. This will be your first grade for the school year.

The packet is due in the main office on August 17, 2015.

Because Geometry may be new to some of you, there are several sample problems in your packet. If you need additional help with Geometry or help with Algebra you can try mathematics websites such as:

www.Khanacademy.org or www.regentsprep.org.

You can also make an appointment with a mathematics teacher by emailing me at dtinsonsmith@nmtcs.net.

MATH ASSIGNMENTS

- Entering 9th Grade - Algebra 1 Packet
- Entering 10th Grade - Geometry Packet
- Entering 11th Grade - Algebra 2 Packet

Notes:

- Work must be done in pencil
- You must show the work for each problem
- Do not use paper ripped out of a notebook
- Number each problem
- Put your name on each page
- If you need help make an appointment

HAVE A GREAT SUMMER! SEE YOU IN SEPTEMBER!
THE NMTCS MATHEMATICS DEPARTMENT

Name: _____

Date _____

Please show all work in the space provided and put your answer on the blank.

Algebra 2A Summer Assignment

Multiple Choice

Identify the choice that best completes the statement or answers the question.

Use a percent proportion.

- _____ 1. 217 is what percent of 620?
- | | |
|---------|----------|
| a. 29% | c. 0.35% |
| b. 3.5% | d. 35% |

Simplify:

- _____ 2. $(w^6 c)(-3w^4 c^3)$
- | | |
|-------------------|------------------|
| a. $-3w^{10} c^4$ | c. $-3w^9 c^3$ |
| b. $3w^{10} c^4$ | d. $3w^{11} c^3$ |

Simplify the expression using positive exponents.

- _____ 3. $\left(\frac{m^6}{n^3}\right)^6$
- | | |
|-------------------------|----------------------------|
| a. $m^{36} + n^{18}$ | c. $\frac{m^{36}}{n^{18}}$ |
| b. $\frac{m^{36}}{n^3}$ | d. $\frac{m^{12}}{n^9}$ |

Solve the equation. Round your result to two decimal places.

- _____ 4. $0.4x - 0.2 = -2.5$
- | | |
|----------|----------|
| a. -2.70 | c. -5.75 |
| b. -3.25 | d. -6.75 |

Find the product and simplify.

- _____ 5. $(5c - 2)(3c + 4)$
- | | |
|----------------------|----------------------|
| a. $15c^2 + 26c - 8$ | c. $15c^2 - 14c + 2$ |
| b. $15c^2 + 14c + 2$ | d. $15c^2 + 14c - 8$ |

6. $(-3x + 2)(-3x - 2)$

a. $9x^2 + 12x - 4$

b. $9x^2 - 4$

c. $-9x^2 - 12x - 4$

d. $9x^2 + 4$

Find the difference.

7. $(8x^3 - 8x^2 - 2) - (4x^3 - 6x^2 + 7)$

a. $12x^3 - 14x^2 + 5$

b. $12x^3 - 14x^2 - 9$

c. $4x^3 - 2x^2 + 5$

d. $4x^3 - 2x^2 - 9$

Simplify the expression by combining like terms.

8. $7x + 6(x + 5) + 5(x + 2)$

a. $8x + 20$

b. $18x + 20$

c. $18x + 7$

d. $18x + 40$

Simplify the expression using positive exponents.

9. $\left(\frac{-4}{q}\right)^8$

a. $\frac{32}{q^8}$

b. $\frac{65,536}{8q}$

c. $\frac{65,536}{q^8}$

d. $\frac{32}{8q}$

Solve:

10. $-5x + 23 + 7x + 23 = 4$

a. 22

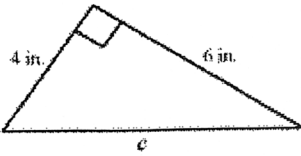
b. -21

c. 21

d. -22

Find the unknown length. Round to the nearest tenth, if necessary.

11.



- a. 20.0 in.
- b. 14.4 in.
- c. 7.2 in.
- d. 17.2 in.

Solve the linear system.

12.

$$3x + 4y = 4$$

$$y = 3x - 14$$

- a. $\left(-2, \frac{5}{2}\right)$
- b. (5, 1)
- c. no solution
- d. (4, -2)

13.

$$2x + 2y = 4$$

$$3x - 2y = 16$$

- a. no solution
- b. (12, -2)
- c. (4, -2)
- d. (0, 2)

14. What is the x -intercept of the line $2x + 3y = 6$?

- a. -3
- b. -2
- c. 2
- d. 3

_____ 15. Find the slope of the line passing through the points $A(-2, 2)$ and $B(7, -3)$.

a. $-\frac{5}{9}$

c. $\frac{3}{5}$

b. $-\frac{1}{5}$

d. $-\frac{9}{5}$

_____ 16. Evaluate $\frac{-a}{16} \div \frac{7}{-b}$ when $a = 5$ and $b = 8$.

a. $2\frac{4}{5}$

c. $17\frac{1}{2}$

b. $-2\frac{4}{5}$

d. $\frac{5}{14}$

Simplify.

_____ 17. $\sqrt{200}$

a. $10\sqrt{2}$

c. $20\sqrt{2}$

b. $5\sqrt{2}$

d. $50\sqrt{2}$

_____ 18. $\sqrt{12} + \sqrt{48}$

a. $3\sqrt{6}$

c. $24\sqrt{3}$

b. $\sqrt{60}$

d. $6\sqrt{3}$

_____ 19. $4\sqrt{3} - \sqrt{64} + 6\sqrt{27}$

a. $22\sqrt{3} - 8$

c. $22\sqrt{3} - 8 + 6\sqrt{27}$

b. $9\sqrt{94}$

d. $14\sqrt{3}$

Find the product:

___ 20. $(x+4)(x^2+3x+4)$

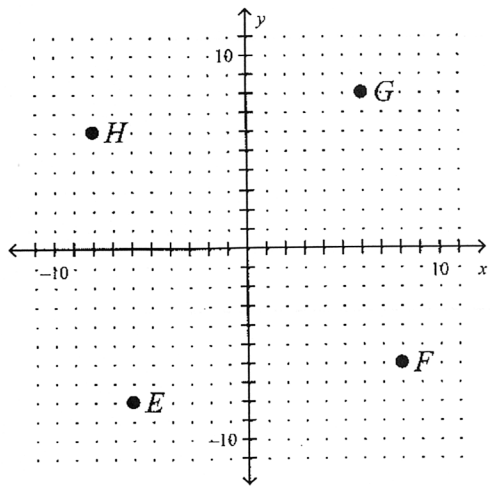
a. $x^3+7x^2+16x+16$

b. $x^3+7x^2-16x+16$

c. $x^3-16x-16$

d. $x^3+16x+16$

___ 21. Name the point at $(8, -6)$.



a. *H*

b. *F*

c. *G*

d. *E*

___ 22. Solve using the quadratic formula: $x^2 - 8x + 11 = 0$

a. $-4 + \sqrt{5}, -4 - \sqrt{5}$

b. $4 + \sqrt{5}, 4 - \sqrt{5}$

c. $8 + 2\sqrt{5}, 8 - 2\sqrt{5}$

d. $-8 + 2\sqrt{5}, -8 - 2\sqrt{5}$

Short Answer

Factor:

23. $x^2 - 12x + 27$

24. $v^2 - v - 42$

Solve:

25. $x^2 - x - 6 = 0$

Factor:

26. $6x^2 + 5x - 4$

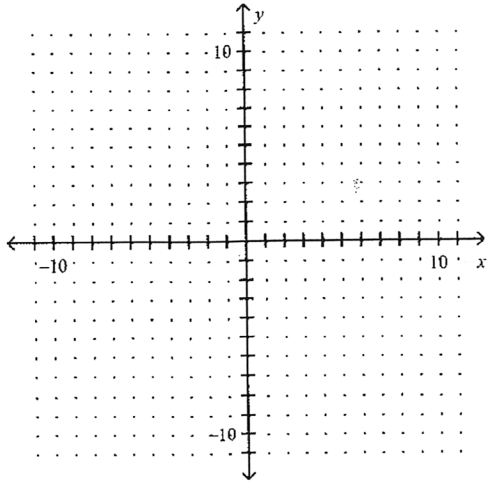
27. Solve the equation $4x^2 + 7x - 2 = 0$.

Solve:

28. $2x^2 + 24x + 72 = 0$

Graph:

29. $y = 2x^2 + 8x + 1$



vertex _____

Solve:

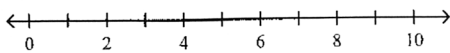
30. $\frac{4}{13}y + 44 = 0$

Solve the equation:

31. $5n - 2(n - 2) = -11$

Solve and graph:

32. $-8p + 5 > -15$



33. Solve the inequality $3 + 4x \leq x - 2$.

Simplify:

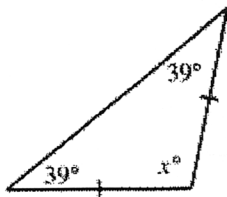
34. $(4q^6 - 5) - (7q^4 - 2) + (2q^6 - 2q^4)$

35. Find the product $-3x^2(2x^2 - 5x - 3)$.

36. A rectangle has length $x + 4$ and width $x - 7$. Write an equation that describes the area, A , of the rectangle in terms of x .

Find the value of x . Classify the triangle by its angles.

37.



Solve the linear system.

38. $9x - 7y = -77$
 $-3x - 9y = 3$

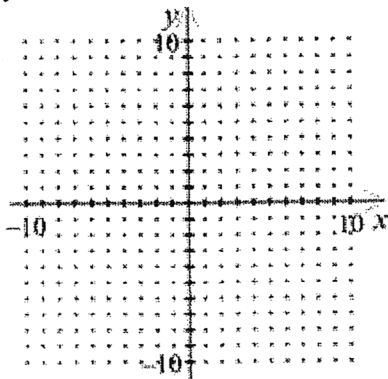
39. Which of the given functions represents the input-output table?

Input	Output
0	8
1	12
2	16
3	20

Functions
$y = 4x - 8$
$y = 4x + 8$
$y = 4x - 9$
$y = 5x + 8$

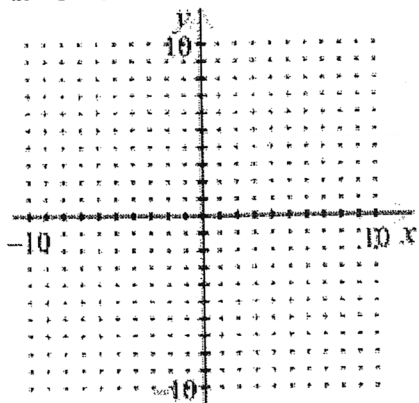
Graph the function.

40. $y = -3x$

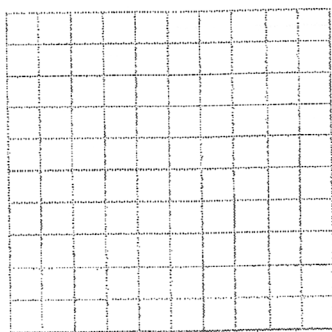


Graph the equation.

41. $4x - 8 = 0$



42. Sketch the line given by $3x - 4y = -12$. Label the x- and y-intercepts.



Simplify the expression.

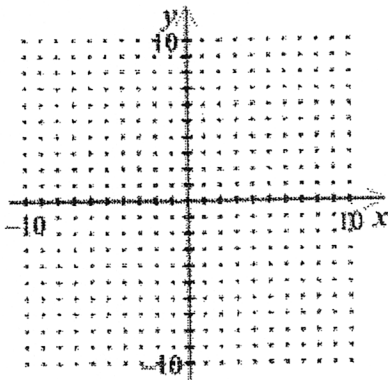
43. $\frac{3h}{8k} + \frac{h}{8k}$

44. Evaluate the expression ab when $a = \frac{5}{6}$ and $b = -\frac{9}{8}$.

45. What is the value of the expression $5^3 + 3^2$?

46. Use the FOIL pattern to find the product $(a^2 + 2)(3a - 1)$.

47. Make an input-output table for the function $y = \frac{x}{2} + 5$ using a domain of 1, 2, 3, 4, and 5. Then graph the function.



48. Solve the equation $\frac{1}{3}x^2 = 48$.

Use the quadratic formula to solve the equation. Round to the nearest hundredth.

49. $2x^2 - x = 1$

50. Simplify the radical expression.

$$\sqrt{\frac{20}{27}}$$
