Geometry Level 1

Summer Packet

This packet of exercises reflects skills that the Math Department considers essential for your success in Geometry!

In this packet you will find the following:

- Questions on material previously learned. (Some material you may not have seen due to adjustments made during virtual learning)
- Topics from Khan Academy referenced in the directions for each problem set. If you are having difficulty recalling how to do a specific type of problem, the Khan Academy videos are an excellent resource for re-teaching. Go to www.khanacademy.org, type in the phrase provided, and it will take you to a video(s) about the topic. Khan Academy also provides further practice on the topics that you can do for your own self-assessment.

Your Responsibility is to:

- DO YOUR BEST to complete all problems and show all necessary work **clearly and carefully**
- Turn in the packet on **THE FIRST DAY OF SCHOOL**! It will be collected and checked for completion on the first day of school.

You will be tested on the material within the first two weeks of school.

Have a great summer!

Summer Packet for Students Entering GEOMETRY Name_____ ID: 1

Assignment Date_____ Period____

Solve each equation. (Khan Academy Video: Variables on both sides)

1) $-\frac{3}{2}\left(3v+\frac{5}{2}\right)=-\frac{251}{36}+\frac{1}{3}v$

2) $-\frac{4}{3}\left(-\frac{3}{2}x+\frac{3}{2}\right)-\frac{4}{3}=-3\frac{1}{3}x-\frac{34}{3}$

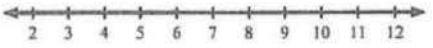
3) $5(1+2k)=3+7(8+4k)$

4) $-3x-2x=8(4-2x)+8(x-1)$

Solve each inequality and graph its solution. (Khan Academy Video: Two Step Inequality example)

5) $-190>-5(8n+6)$

6) $-6(-3-5x)<228$



Solve each proportion. (Khan Academy Video: Proportions 2)

7) $\frac{8}{b-1}=\frac{11}{b+2}$

8) $-\frac{5}{11}=\frac{5b-4}{2b+12}$

Solve each system by substitution.(Khan Academy Topic: Solving Linear Systems by Substitution)

9) $4x + y = 4$
$-3x - 2y = 7$

10) $2x - 8y = 12$
$-3x - 2y = 24$

Solve each system by elimination.(Khan Academy Topic: Solving Linear Systems by elimination and Solving Linear Systems by Multiplication)

11) $6x + 4y = 18$
$-6x - 3y = -18$

12) $3x - 2y = -11$
$5x - 3y = -20$

Simplify.(Khan Academy Topic: Simplifying radicals)

13) $\sqrt{108}$

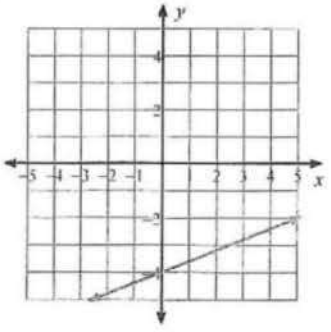
14) $\sqrt{8}$

15) $3\sqrt{32}$

16) $4\sqrt{112}$

Write the slope-intercept form of the equation of each line given the information provided.(Khan Academy Topic:Constructing equations in slope intercept form - there are multiple videos on this topic, Also see equations of parallel and perpendicular lines)

17)



18) $4x + 3y = 22$

19) $y - 3 = 3(x - 4)$

20) Slope $= -\frac{1}{2}$, y-intercept $= -1$

21) through: $(3, -1)$, slope $= -\frac{2}{3}$

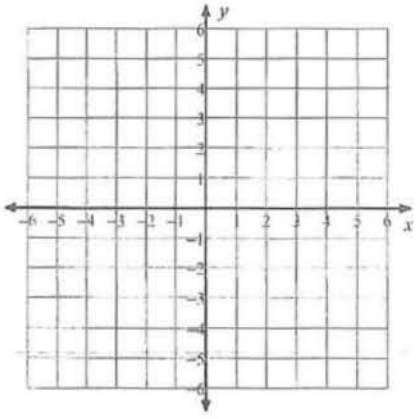
22) through: $(-5, 2)$ and $(4, -4)$

23) through: $(-1, 4)$, parallel to $y = -2x - 5$

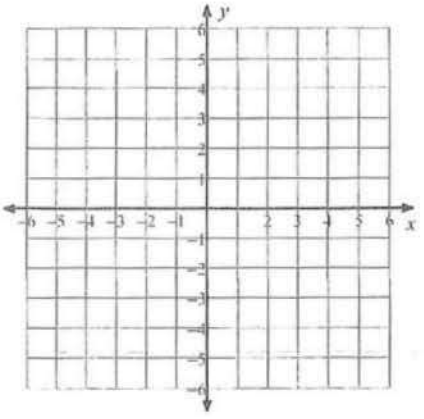
24) through: $(1, -1)$, perp. to $y = \frac{1}{4}x + 4$

Sketch the graph of each line. (Khan Academy Topic: Graphing linear equations in slope intercept form)

25) $3x + y = -4$



26) $x = 4$



Simplify each expression. (Khan Academy Topic: Addition and subtraction of polynomials)

27) $-3(b-3)+3(4b+3)$

28) $7(6r+8)-5(1+8r)$

Factor each completely. (Khan Academy Topic: Factoring Quadratics)

29) $a^2-7a+10$

30) $5x^2+100x+500$

31) $4x^3-44x^2+112x$

32) $3a^3-27a$

33) $5n^2+17n+6$

Solve each equation by factoring. (Khan Academy Topic: Solving a quadratic equation by factoring)

34) $v^2=14-5v$

35) $x^2=9$

36) $x^2 = -24 - 11x$

37) $b^2 = 4b$

Evaluate each function. (Khan Academy Video: Evaluating with function notation)

38) $p(t) = 2t + 4$; Find $p(2)$

39) $p(n) = -n^2 + 5n$; Find $p(-3)$

40) $p(x) = x^2 + 5$; Find $p(-5)$

Evaluate each expression. (Khan Academy Video: Adding and subtracting fractions)

41) $1\frac{2}{3} + \left(-1\frac{6}{7}\right) + 3 + 2$

42) $2\frac{1}{4} - \frac{1}{4} + \left(-2\frac{5}{6}\right) + 3\frac{1}{4}$

Find each quotient. (Khan Academy Video: Multiplying and dividing fractions)

43) $\dfrac{3\frac{3}{4}}{\frac{4}{5}}$

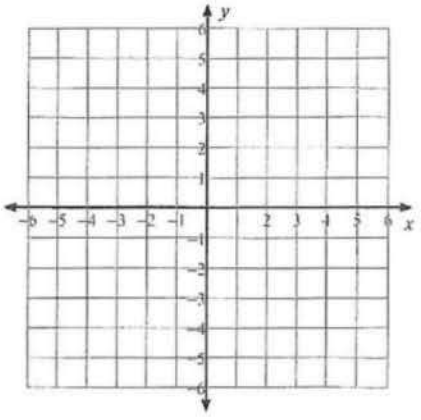
44) $\dfrac{\frac{-2}{1}}{\frac{1}{4}}$

Evaluate each using the values given. (Khan Academy Video: Evaluating expressions in one variable)

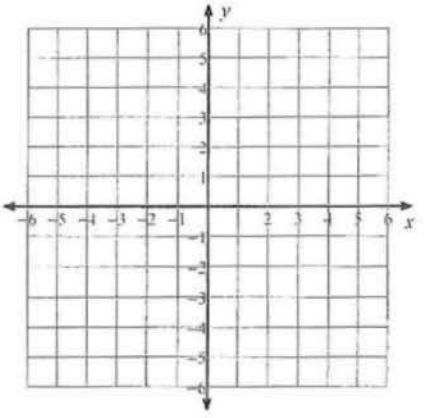
45) $yx - x - (x^2 + y)$; use $x = -3$, and $y = -13$

Sketch the graph of each line. (Khan Academy Topic: Graphing Linear Equations)

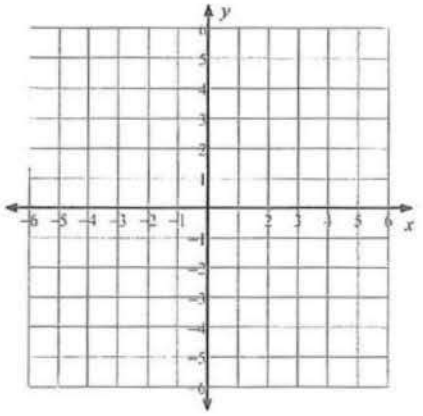
46) $y = -\frac{3}{5}x - 4$



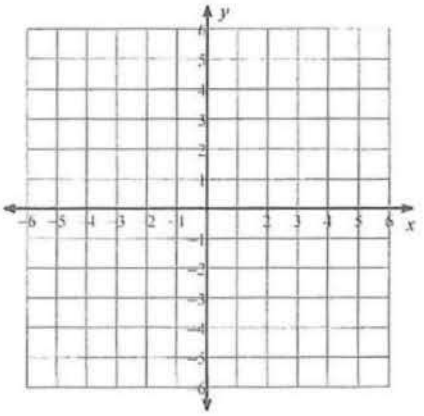
47) $4x - 3y = 6$



48) x-intercept = –4, y-intercept = 2



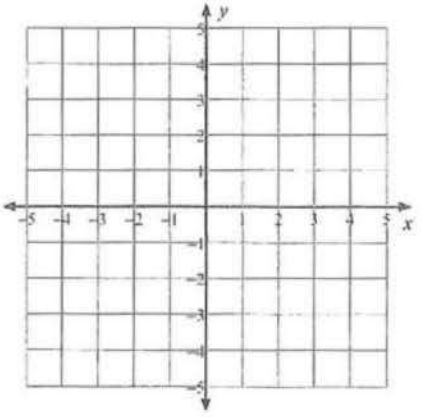
49) $10y - 4x - 10 = 0$



Solve each system by graphing. (Khan Academy Topic: Graphing Systems of Equations)

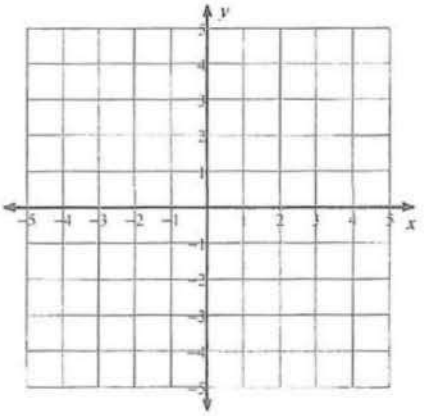
50) $y = x - 4$

$y = -\frac{5}{2}x + 3$



51) $y = \frac{1}{4}x + 4$

$y = -\frac{3}{2}x - 3$



Find each product. (Khan Academy Topic: Multiplying Polynomials)

52) $(x + 2)(4x + 5)$

53) $(7b + 4)(5b - 2)$

54) $(7r-3)(2r+3)$

55) $(4n-1)(8n-6)$

56) $(3v-7)(v+2)$

57) $(3x+6)(2x+6)$

58) $(2n+7)(8n^2+6n-1)$

59) $(4b-5)(5b^2-8b-1)$

Simplify. Your answer should contain only positive exponents.

60) $\dfrac{(ab^0)^{-3}\cdot(a^{-3}b^{-1})^{-4}}{2ba^{-3}}$

61) $\dfrac{2xy^{-2}\cdot(2x^3y^3)^3}{x^{-1}}$

62) $\dfrac{y^4\cdot x^{-4}y^0}{(x^2y^3)^{-4}}$

63) $\dfrac{(u^{-2}\cdot u^{-3}v^{-4})^4}{2uv^{-2}}$

64) $\dfrac{(y^4)^2\cdot x^2}{2xy^3}$

65) $\dfrac{2u}{2vu^4\cdot(2u^{-3}v^3)^{-4}}$

