Algebra 1
Summer Packet

This packet of exercises reflects skills that the Math Department considers essential for your success in Algebra 1!

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!

Name_____ ID: 1

ALL WORK MUST BE SHOWN

Date_____ Period____

Find each product. (Khan Academy Topic: Multiply Positive and Negative Numbers)

1) $\left(-1\dfrac{2}{5}\right)\left(3\dfrac{1}{6}\right)$

2) $\left(\dfrac{1}{10}\right)\left(-\dfrac{3}{2}\right)$

Evaluate each expression. (Khan Academy Topic: Learn how to add and subtract negative numbers)

3) $\left(-\dfrac{4}{7}\right)-\left(-3\dfrac{3}{8}\right)$

4) $(-2)+4\dfrac{3}{5}$

5) $\left(-\dfrac{4}{5}\right)+4\dfrac{1}{7}+\dfrac{7}{4}$

Find each quotient. (Khan Academy Topic: Dividing positive and negative numbers)

6) $5\div\dfrac{7}{6}$

7) $-4\div4\dfrac{2}{5}$

8) $\dfrac{-3}{2}\div-1\dfrac{2}{5}$

Evaluate each expression. (Khan Academy Topic: Absolute Value)

9) $\left|(-5)^2\right|$

10) $|5|^2$

11) $3+-3--5$

12) $|-1-1|$

Create an equation to solve the following word problems. (Khan Academy Topic: One step equations)

13) Mike ran 25 miles less than Ted last week. Mike ran 16 miles. How many miles did Ted run?

14) Thirteen years ago, Stephanie was 36 years old. How old is she now?

15) A recipe for cookies calls for $3\frac{1}{8}$ cups of sugar. Arjun accidentally put in $3\frac{5}{7}$ cups. How many extra cups did he put in?

16) Last week Jill ran 4 miles less than Joe. Jill ran 16 miles. How many miles did Joe run?

Create an equation using a variable (define your variable). Then solve. (Khan Academy Topic: Two step equations)

17) You had $20 to spend on two pens. After buying them you had $16. How much did each pen cost?

18) Ashley had some candy to give to her five children. She first took six pieces for herself and then evenly divided the rest among her children. Each child received three pieces. With how many pieces did she start?

19) On Tuesday Rob bought eight hats. On Wednesday half of all the hats that he had were destroyed. On Thursday there were only 14 left. How many did he have on Monday?

20) Ndiba bought a magazine for $6 and five notepads. He spent a total of $26. How much did each notepad cost?
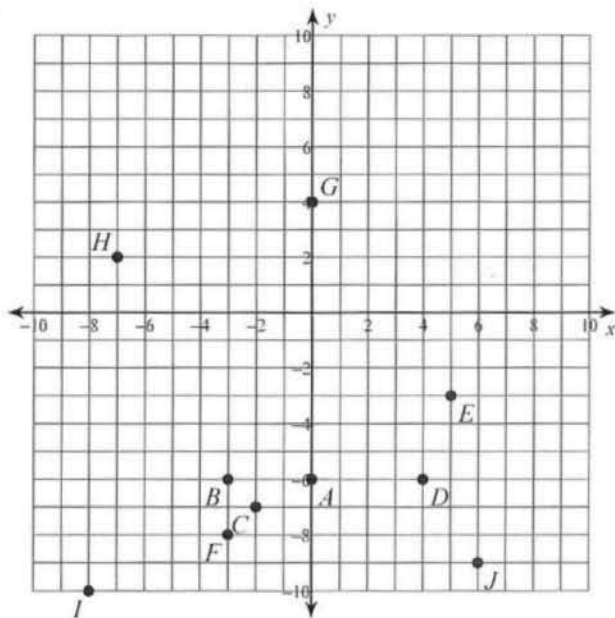
Plot each point and label with the letter. (Khan Academy Topic: Graphing Points)

21) $C(10, -4)$ $D(-1, 2)$ $E(-2, 0)$
    $F(0, -7)$ $G(-8, 9)$ $H(0, -8)$
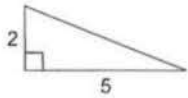 $I(-3, 2)$ $J(-3, -8)$ $K(-6, 6)$
    $L(2, 10)$
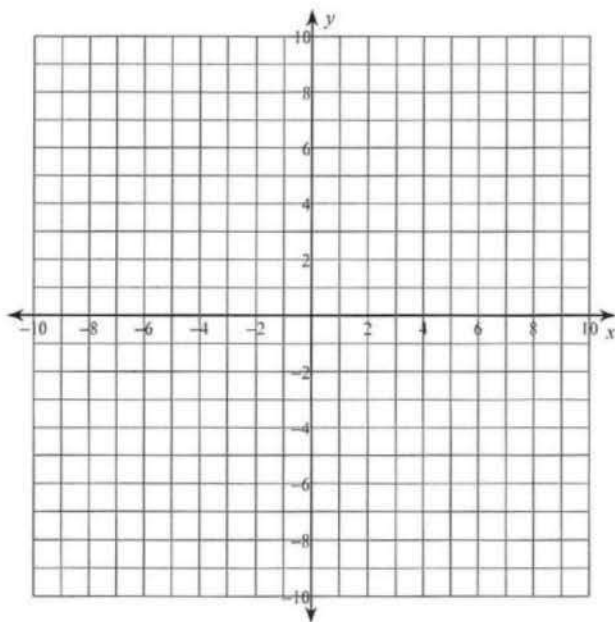
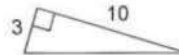**State the coordinates of each point. (Khan Academy Topic: Graphing Points)**

22)

Find each missing length to the nearest tenth. (Khan Academy Topic: Pythagorean Theorem)

23)

24)

Evaluate each expression. (Khan Academy Topic: Order of Operations)

25) $(1 + -6 + 3) \div -2$

26) $-12 \div (3 + 2 - 2)$

27) $(4 + 4) \div (-3 + 5)$

28) $\left(\dfrac{4}{5}\right)^2 + 1\dfrac{3}{5}$

-4-

29) $2\dfrac{1}{2} \div \left(3\dfrac{3}{4} - 3\dfrac{1}{4}\right)$

30) $-3 - 2 + (-6)^2 - -6 - \dfrac{-16}{-4}$

31) $\dfrac{18}{6} + -1 - 2 - (6 - (1 - -2))$

32) $((-5)(3))(3) - \left(\dfrac{4}{(4)(-1)}\right)(-2)$

Evaluate each using the values given. (Khan Academy Topic: Order of Operations and Evaluating Expressions)

33) $(4)(yz \div 6)$; use $y = -4$, and $z = -6$

34) $(j - h)(h + k)$; use $h = -2$, $j = 2$, and $k = 1$

35) $a + b + a - a$; use $a = -3$, and $b = -2$

Simplify each expression. (Khan Academy Topic: Distributive Property)

36) $-(5 - 5n)$

37) $8(x - 3)$

38) $-6(b + 8)$

39) $3 + 2(a - 2)$

40) $-9(-3p + 1) - 1$

Solve each equation. (Khan Academy Topic: One Step Equations and Two Step Equations)

41) $\dfrac{k}{11} = 20$

42) $m - 6 = -20$

43) $34 = p + 19$

44) $0 = -2 + x$

45) $n - 14 = -24$

46) $\dfrac{n}{10} = 8$

47) $-10 = -9 + \dfrac{x}{14}$

48) $9 - 6n = -33$

49) $-144 = -9(-3 + b)$
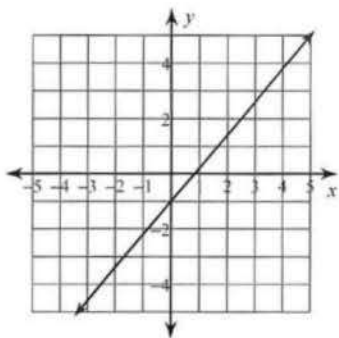
50) $10a - 1 = 19$

51) $1 = \dfrac{a - 10}{8}$

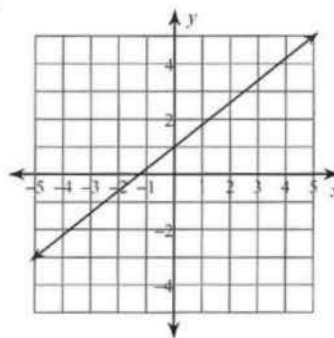52) $\dfrac{x + 1}{2} = 3$

53) $\dfrac{n}{15} - 8 = -7$

Write the slope-intercept form of the equation of each line. (Khan Academy Topic: Writing Linear Equations given a graph)

54)

55)

Write the slope-intercept form of the equation of each line. (Khan Academy Topic: Writing Linear Equations)

56) $x + 2y = 20$

57) $3x + y = 18$

Find the slope of the line through each pair of points.

58) $(5, -1), (11, -14)$

59) $(-1, 7), (17, 7)$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

60) Slope $= \dfrac{3}{2}$, y-intercept $= 1$

Write the slope-intercept form of the equation of the line through the given points.

61) through: $(1, 4)$ and $(2, -2)$