

**Geometry
SUMMER WORK**

YOUR NAME: _____

Directions: The concepts covered in this packet are skills that students should have mastered in Algebra 1. If you are drawing a blank, please refer to the problems that have already been completed for you.

Rationale: The math course you are starting on August 14th has some high expectations. Therefore, we are asking for you to work on the skills in this packet to be better prepared for this course. The skills include:

- (1) follow order of operations appropriately in all situations
- (2) solve algebraic equations and proportions
- (3) graphing coordinate points, lines and figures
- (4) perimeter and area of circles, triangles and quadrilaterals
- (5) naming line segments and angles

To refresh on these topics, you'll need to practice these skills in the weeks leading up to the beginning of the 2019 - 2020 school year.

Resources: For each problem you need to complete, there is an example problem worked out in detail. If that's not enough to guide your work, then we suggest you google the topic you are struggling with or go to one of the following websites & search the topic...

<https://www.youtube.com/channel/UCcfzvi8xPFOToNua6HRDfIA/playlists> (English & Spanish Videos)

<https://www.khanacademy.org/>

<http://www.purplemath.com/>

<http://www.mathgoodies.com/students.html>

This packet will count as a grade, so please take the time to complete these problems.

Thank you,

**Mr. Bazon
Mrs. Burns
Mrs. Hutchinson
Mrs. Frias
Mr. Phillips
Mrs. Tello**

(WB Geometry Teachers for 2019-2020)

Learning Target #1: I can correctly perform order of operations and evaluate expressions.

ORDER OF OPERATIONS	GROUPING SYMBOLS (P)	EXPONENTS & ROOTS (E)	MULTIPLICATION & DIVISION (M) (D)	ADDITION & SUBTRACTION (A) (S)
<i>Parenthesis</i> <i>Exponents</i> <i>Multiplication</i> <i>Division</i> <i>Addition</i> <i>Subtraction</i>	Parentheses () OR Brackets [] Absolute values	Exponents Ex: $3^2 \rightarrow 3 \cdot 3 = 9$ OR Roots Ex: $\sqrt{25} = 5$	MUST be done from LEFT to RIGHT!! Ex: $18 \div 6 = 3$ $\begin{array}{r} 3 \cdot 3 \\ \hline 9 \end{array}$	MUST be done from LEFT to RIGHT!! Ex: $4 - 2 + 7$ $\begin{array}{r} 2 + 7 \\ \hline 9 \end{array}$

#1 - 4: Evaluate.

1a. $4 + 3 \cdot 4 + 2 - 9$

$$4 + 12 \div 2 - 9$$

$$4 + 6 - 9$$

$$10 - 9$$

$$\boxed{1}$$

1b. $20 - 6 + 6 \cdot 2 - 11$

2a. $4 + 3(5 - 6)^2$

$$4 + 3(-1)^2$$

$$4 + 3(1)$$

$$4 + 3$$

$$\boxed{7}$$

2b. $15 - (3 - 7)^2 \cdot 3$

3a. $(2x)^2 - y$ when $x = 3$, $y = 17$

$$(2(3))^2 - 17$$

$$(6)^2 - 17$$

$$36 - 17$$

$$\boxed{19}$$

3b. $5x - 6y^3$ when $x = -7$, $y = 1$

4a. $\frac{1}{2}(x - 7) - 3x$ when $x = -11$

$$\frac{1}{2}(-11 - 7) - 3(-11)$$

$$\frac{1}{2}(-18) - 3(-11)$$

$$-9 + 33$$

$$\boxed{24}$$

4b. $b^2 - 4ac$ when $a = 1$, $b = 2$, $c = -3$

Learning Target #2: I can solving algebraic equations.

#5 - 11: Solve.

5a. $4x - 3 = 9$
 $+3 \quad +3$

$$\frac{4x = 12}{4 \quad 4}$$

$$\boxed{x = 3}$$

5b. $12x + 1 = -11$

6a. $3x - 6 = 5x + 12$

$$\frac{-3x \quad -3x}{-6 = 2x + 12}$$

$$\frac{-12}{-12}$$

$$\frac{-18 = 2x}{-12}$$

$$\frac{-18 = 2x}{-9 = x}$$

$$\boxed{-9 = x}$$

6b. $6 - 7x = 1 - 8x$

7a. $-3(2x + 5) = 20$

$$-6x - 15 = 20$$

$$\frac{+15 \quad +15}{-6x = 35}$$

$$\frac{-6x = 35}{-6 \quad -6}$$

$$\boxed{x = -\frac{35}{6}}$$

7b. $-8(x - 7) = -120$

8a. $2(4 - x) = 16 + 2x$

$$8 - 2x = 16 + 2x$$

$$\frac{+2x \quad +2x}{8 = 16 + 4x}$$

$$8 = 16 + 4x$$

$$\frac{-16 \quad -16}{-8 = 4x}$$

$$\frac{-8 = 4x}{4 \quad 4}$$

$$\frac{-8 = 4x}{4 \quad 4}$$

$$\boxed{-2 = x}$$

8b. $18 - 8x = 2(3 - 7x)$

$$9a. \quad 4 - 3(4x + 6) = 1$$

$$4 - 12x - 18 = 1$$

$$-12x - 14 = 1$$

$$+14 \quad +14$$

$$-12x = 15$$

$$\frac{-12}{-12} \quad \frac{15}{-12}$$

$$x = -\frac{5}{4}$$

$$9b. \quad 3x + 8(3 + 8x) = -378$$

$$10a. \quad 5(3x - 2) + 10 = 2(5 - 6x)$$

$$15x - 10 + 10 = 10 - 12x$$

$$15x = 10 - 12x$$

$$+12x \quad +12x$$

$$27x = 10$$

$$\frac{27}{27} \quad \frac{10}{27}$$

$$x = \frac{10}{27}$$

$$10b. \quad 2(x + 1) + 3x = 3x - 1$$

$$11a. \quad 3\left(\frac{2}{3}m + 5 = 4m - 9\right)3$$

$$2m + 15 = 12m - 27$$

$$-2m \quad -2m$$

$$15 = 10m - 27$$

$$+27 \quad +27$$

$$\frac{42}{10} = \frac{10m}{10} \quad \frac{21}{5} = m$$

$$11b. \quad 4 - \frac{5}{8}x = \frac{1}{2}x + 2$$

Learning Target #3: I can solve proportions.

#12-14: Solve.

$$12a. \frac{x}{9} \times \frac{4}{5}$$
$$\frac{5x}{5} = \frac{45}{5}$$
$$\boxed{x = 9}$$

$$12b. \frac{x}{5} = \frac{10}{4}$$

$$13a. \frac{3}{4} \times \frac{x-6}{8}$$

$$4(x-6) = 24$$

$$4x - 24 = 24$$
$$+24 \quad +24$$

$$\frac{4x}{4} = \frac{48}{4}$$

$$\boxed{x = 12}$$

$$13b. \frac{2}{x-6} = \frac{4}{7}$$

$$14a. \frac{7}{x+3} \times \frac{3}{x+7}$$

$$7(x+7) = 3(x+3)$$

$$7x + 49 = 3x + 9$$

$$\frac{-3x \quad -3x}{4x + 49 = 9}$$

$$\frac{-49 \quad -49}{4x = -40}$$

$$\frac{4x}{4} = \frac{-40}{4}$$

$$\boxed{x = -10}$$

$$14b. \frac{x+2}{10} = \frac{x-10}{4}$$

$$14c. \frac{a-1}{a+6} = \frac{5}{10}$$

Learning Target #4: I can plot points on the xy-plane.

#15, plot Coordinate Points E-J.

15a. A(2,6)

B(5, -3)

15b. E(1, -3)

F(3,4)

G(-1,-8)

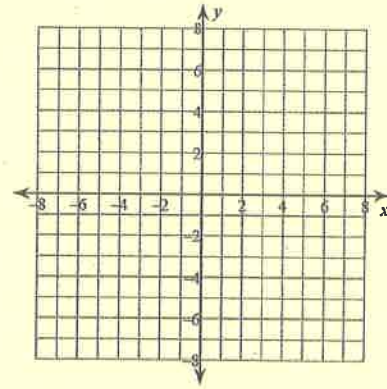
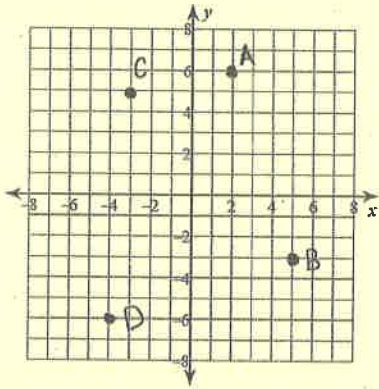
C(-3, 5)

D(-4, -6)

H(-7, 1)

I(7,-7)

J(-5, 6)

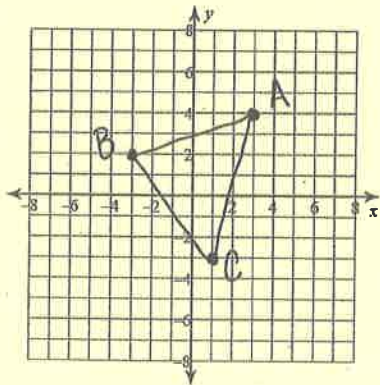


Learning Target #5: I can graph quadrilaterals and triangles on the coordinate plane.

#16, graph the quadrilateral or triangle based on the given coordinate points.

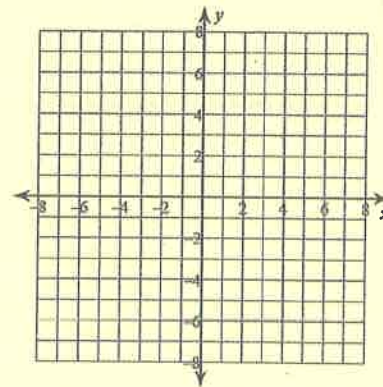
16a. Given:

A(3,4) B(-3, 2) C(1, -3)



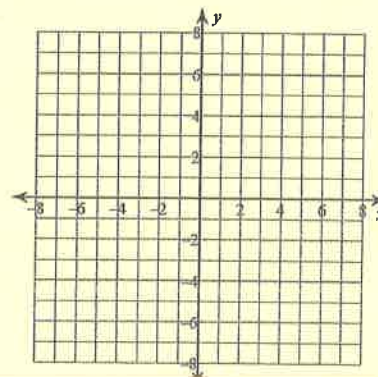
16b. Given:

D(4, 6) E(-7, 4) F(-5, -4)



16c. Given:

W(-6, 0) X(-4, 5) Y(4, 5) Z(6, -2)

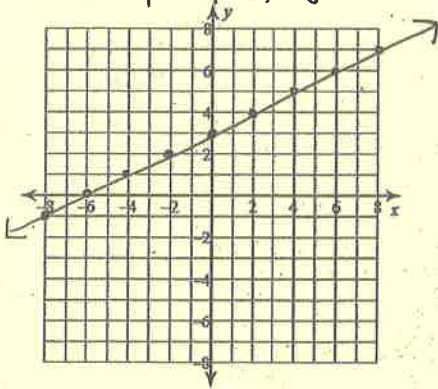


Learning Target #6: I can graphing linear equations.

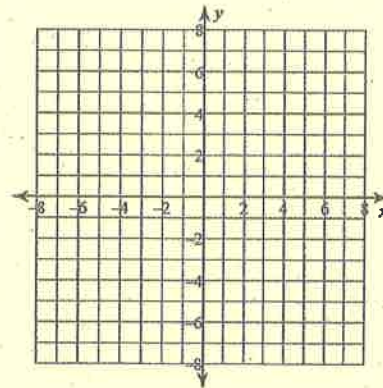
#17-20: Graph.

17a. $y = \frac{1}{2}x + 3$

start on y-axis at 3
count slope up 1, right 2

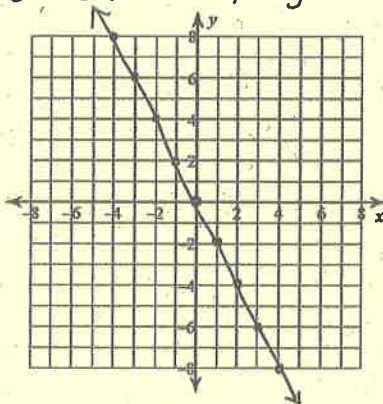


17b. $y = \frac{3}{4}x - 7$

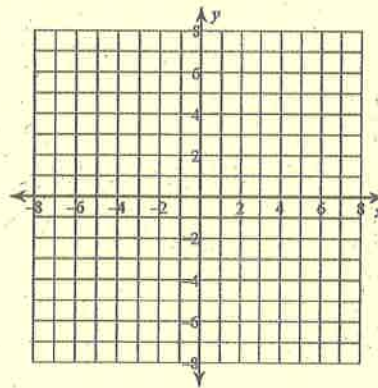


18a. $y = -2x + 0$

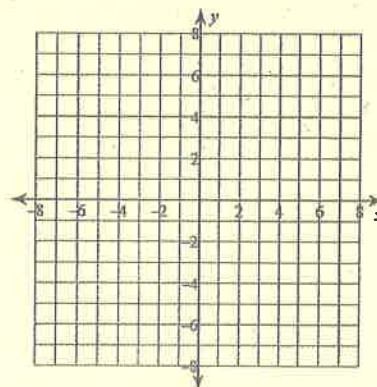
start on y-axis at 0
count down 2, right 1



18b. $y = -3x + 4$



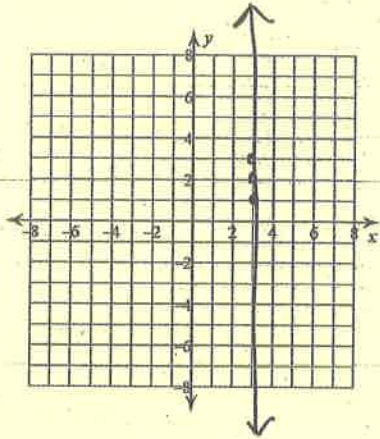
18c. $y = -x$



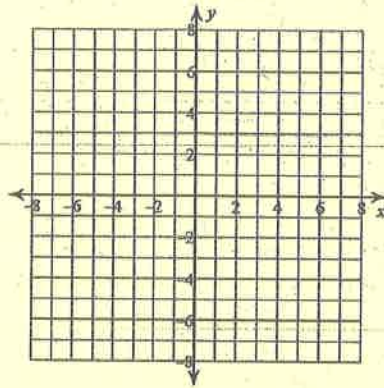
19a. $x = 3$

x	y
3	1
3	2
3	3

*Plot each point



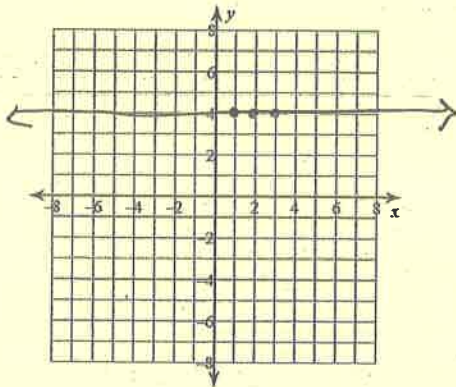
19b. $x = -2$



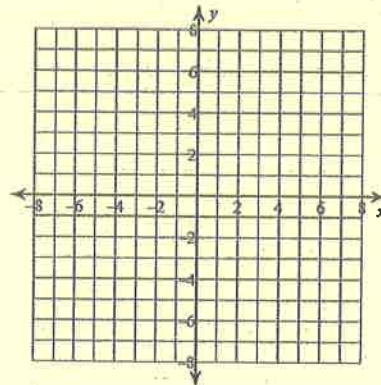
20a. $y = 4$

x	y
1	4
2	4
3	4

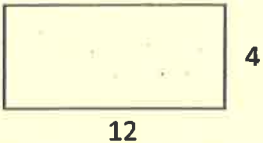
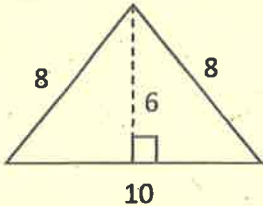
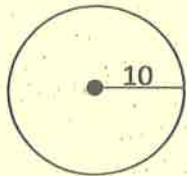
*Plot each point



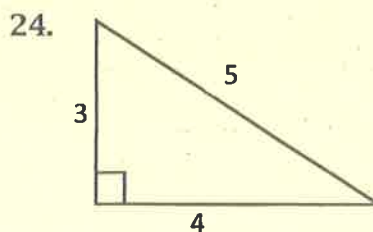
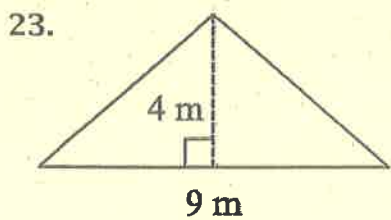
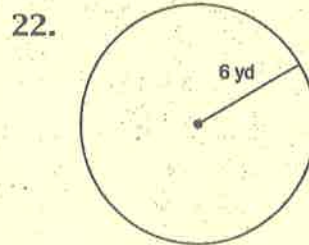
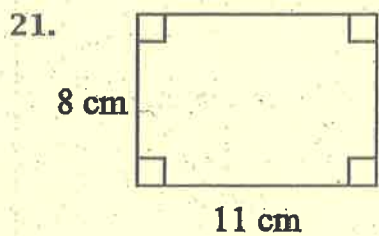
20b. $y = 5$



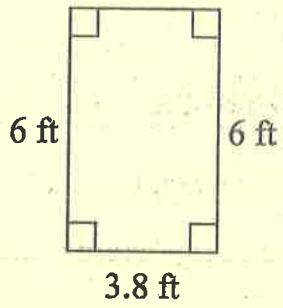
Learning Target #7: I can determine the area of a quadrilateral, triangle and circle.

Type	Example	Formula
Area	 $A = 12 \cdot 4$ $= 48 \text{ units}^2$	$A = \text{base} \cdot \text{height}$
	 $A = \frac{1}{2} \cdot 10 \cdot 6$ $= 5 \cdot 6$ $= 30 \text{ units}^2$	$A = \frac{1}{2} \text{base} \cdot \text{height}$ or $\frac{\text{base} \cdot \text{height}}{2}$
	 $A = \pi \cdot (10)^2$ $= 100\pi \text{ units}^2$	$A = \pi \cdot (\text{radius})^2$

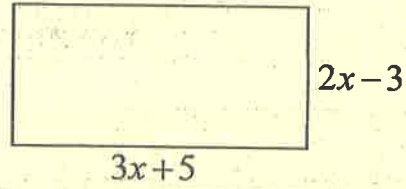
#21-26: Determine the area.



25.



26. ***CHALLENGE***

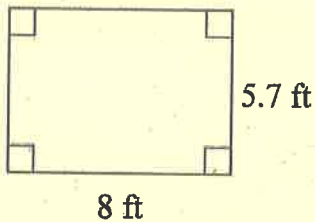


Learning Target #8: I can determine the perimeter of a quadrilateral and a circle.

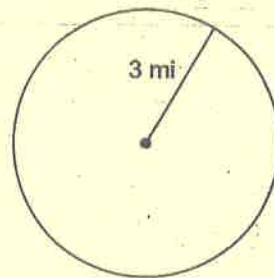
Type	Examples		
<p>Perimeter</p> <p>Add up the sides of the figure.</p>	$P = 4 + 12 + 4 + 12$ $= 16 + 4 + 12$ $= 20 + 12$ $= 32 \text{ units}$	$P = 8 + 8 + 10$ $= 16 + 10$ $= 26 \text{ units}$	$C = 2 \cdot \pi \cdot \text{radius}$ $C = 2 \cdot \pi \cdot 10$ $= 20\pi \text{ units}$

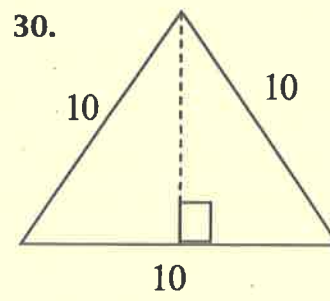
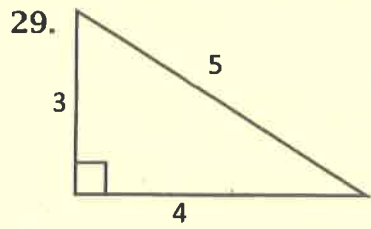
#27-32: Determine the perimeter.

27.

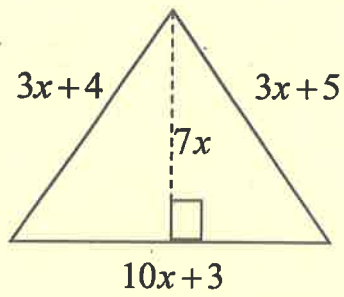


28.

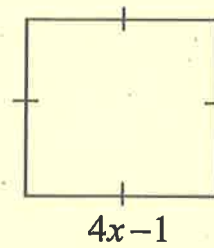




31. ***CHALLENGE***



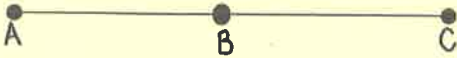
32. ***CHALLENGE***



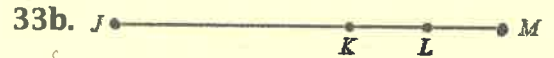
Learning Target #9: I can name a line segment.

#33: Name the line segment.

33a. To name a line segment, you must state two points on the ends of the line. The order of points does not matter



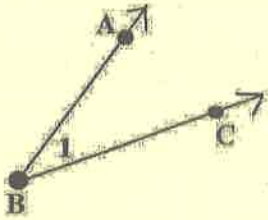
Name: \overline{AC} or \overline{CA}



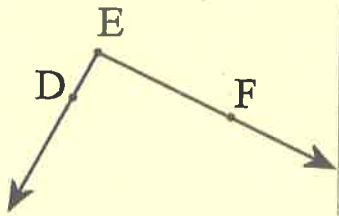
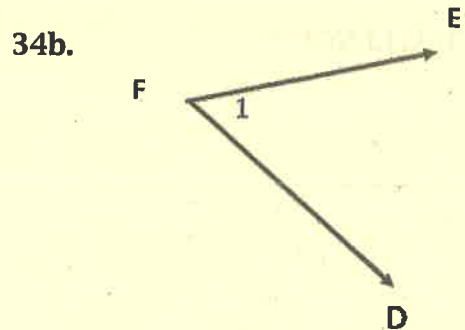
Learning Target #10: I can name an angle.

#34: Name each angle in two ways.

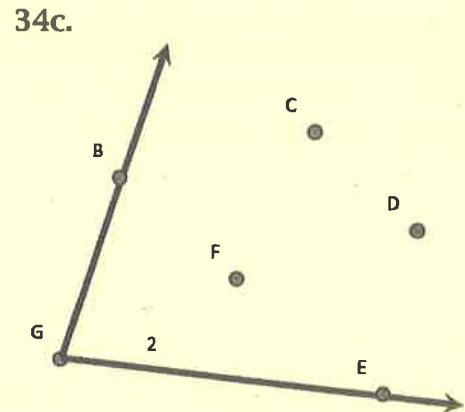
34a. There are 4 ways to name an angle.



Name: $\sphericalangle ABC$
 $\sphericalangle CBA$
 $\sphericalangle 1$
 $\sphericalangle B$



Name: $\sphericalangle DEF$
 $\sphericalangle FED$
 $\sphericalangle E$



Geometry

Summer Packet_ANSWER KEY

1b. 7

2b. -33

3b. -41

4b. 16

5b. -1

6b. -5

7b. 22

8b. -2

9b. -6

10b. $-\frac{3}{2}$

11b. $\frac{3}{2}$

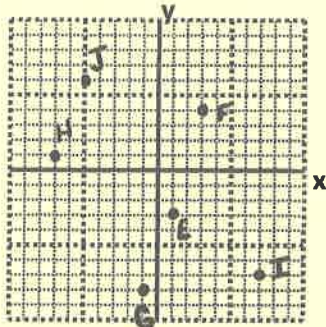
12b. 12.5

13b. 9.5

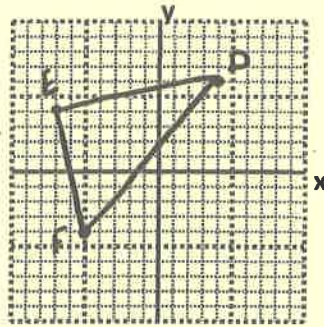
14b. 18

14c. 8

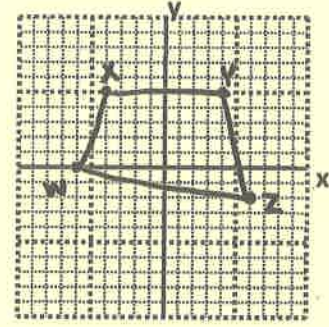
15b.



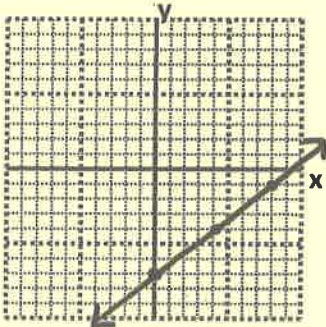
16b.



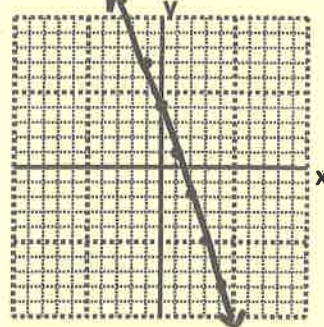
16c.



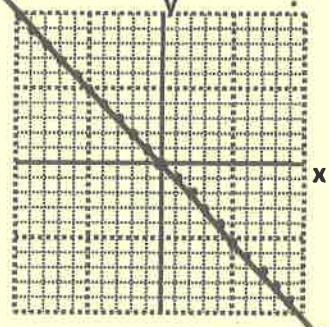
17b.



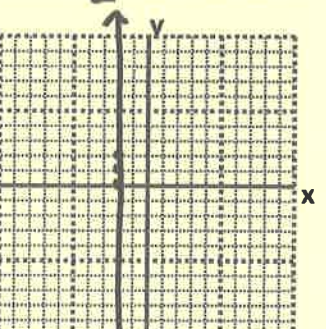
18b.



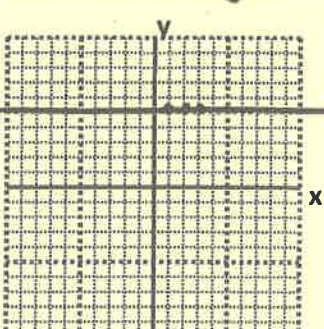
18c.



19b.



20b.



21. 88cm^2

22. $36\pi\text{yd}^2$

23. 18m^2

24. $6u^2$

25. 22.8ft^2

26. $6x^2 + x - 15$

27. 27.4 ft

28. $6\pi\text{mi}$

29. $12u$

30. $30u$

31. $16x + 12$

32. $16x - 4$

33b. $\overline{JM}, \overline{MJ}$

33c. $\overline{CF}, \overline{FC}$

34b. $\angle 1$
 $\angle F$
 $\angle DEF$
 $\angle FED$

34c. $\angle 2$
 $\angle G$
 $\angle BGE$
 $\angle EGB$

