

Memorial Middle School

Algebra I

Summer Review Packet



Welcome to 8th Grade Algebra I! This summer review assignment is designed for all students enrolled in 8th Grade Algebra I for the next school year. It will refresh your skills and prepare you for a successful year!

- This packet is to be completed by the first day of school.
- It will be collected and graded based upon completion and effort.
- To receive full credit on summer work, every problem must be attempted even if the final answer was not obtained.
- Because these are not new concepts, topics in this packet will be reviewed at a rapid pace during the beginning of the school year.
- A formal assessment will be given based on information reviewed in this packet during the first few weeks of school in September.
- When necessary, use the formulas and hints provided in this packet and online sites to help refresh your memory!
- You must SHOW ALL WORK!
- Enjoy! ☺

See you in September!

Solving Equations:

- If parentheses, distribute first!
- When moving terms from one side of the equal sign to the other, DO THE OPPOSITE!

Solve each equation.

1) $\frac{2}{3}x + 5 = 15$

2) $-4x - 10 = 14$

3) $9t + 7 = 3t - 5$

4) $6k - 3 = 2k + 13$

5) $1.4f + 1.1 = 8.3 - f$

6) $42 - 14a = -15a + 5$

7) $3(a + 1) - 5 = 3a - 2$

8) $5n + 4 = 7(n + 1) - 2n$

9) $4(2y - 1) = -10(y - 5)$

10) $3(q - 5) = 2(q + 5)$

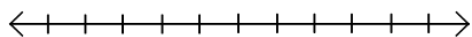
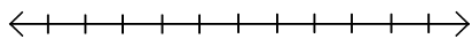
Solving Inequalities:

- Use the equation rules from the previous page.
- When dividing by a negative, flip the inequality sign.
- Make sure the variable is on the left before graphing.
 - $>$ or $<$: open circle ○
 - \geq or \leq : closed circle ●
 - $>$ or \geq : arrow to the right
 - $<$ or \leq : arrow to the left

Solve and graph.

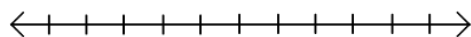
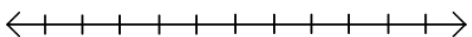
11) $-\frac{3}{5}a + 2 \geq 8$

12) $5x - 3 > 12$



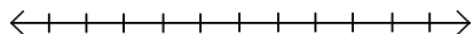
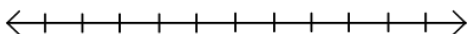
13) $6w + 4 > 5w + 2$

14) $6x - 7 \leq 6x - 10$



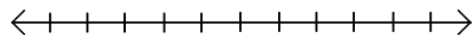
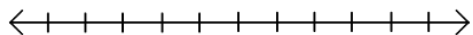
15) $14w - 5 \geq -4 + 15w$

16) $\frac{2x-3}{5} \leq 7$



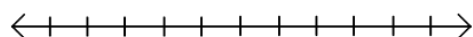
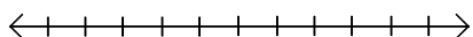
17) $9r + 15 \geq 24 + 10r$

18) $6 + 2x < 12 + 8x - 3x$



19) $3(4m + 2) \leq 6(2m + 1)$

20) $4y + 2 < 8y - 2(3y - 5)$



Combining Like Terms and the Distributive Property:

- Combining Like Terms Example: $4b + 3b = 7b$
- Distributive Property Example: $3(x - 5) = 3x - 15$

Simplify each expression.

21) $-8(-5c + 7) + 5c$

22) $3 - 2(6 - 5n)$

23) $10x + 36 - 4(x + 3) - 1$

24) $-4p - (1 - 6p) + 8p - 11$

25) $-7(k - 3) + 2(4k + 8w) - 5w$

26) $16a + 5(d - 2a) + 2(3d - 1)$

Slope:

- Finding slope from a graph: $\frac{\text{rise}}{\text{run}}$

Find the slope of each line.

27) a

28) b

29) c

30) d

31) e

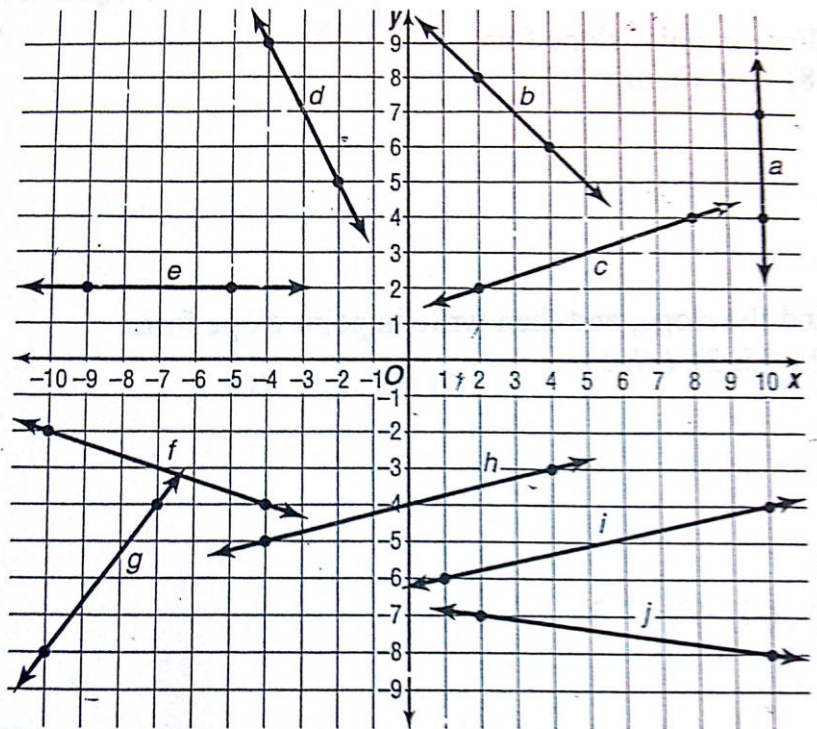
32) f

33) g

34) h

35) i

36) j



Graphing Linear Equations:

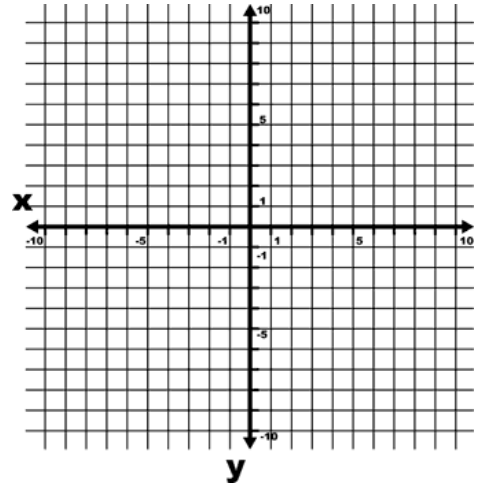
- Plug in the given x -values into the equation to find y -values.
- Plot each ordered pair (x, y) to form a line.
- Use $\frac{\text{rise}}{\text{run}}$ to determine the slope.

Graph. Then identify the slope of the line.

37) $y = 2x - 4$

x	y
-1	
0	
2	
3	
4	
6	

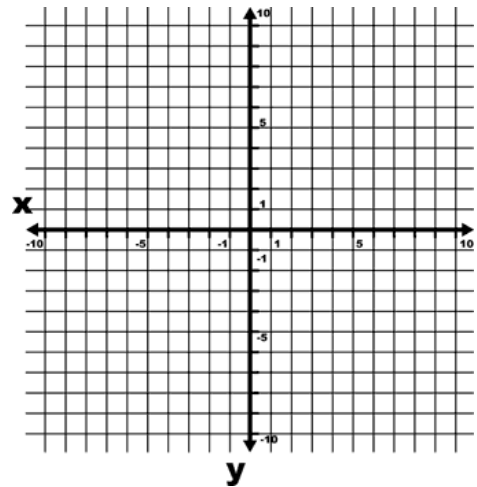
Slope = _____



38) $y = -x - 3$

x	y
-7	
-4	
-1	
0	
2	
3	

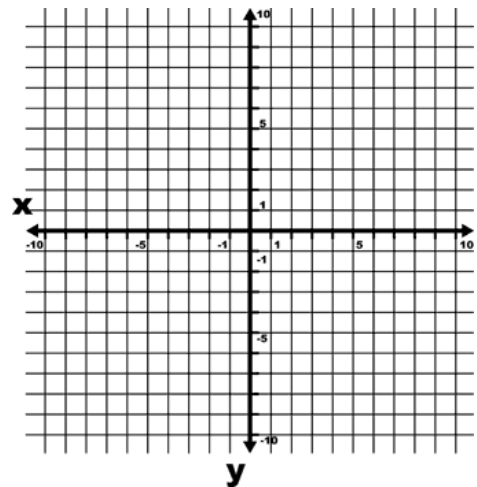
Slope = _____



39) $y = 1/3x + 1$

x	y
-6	
-3	
0	
3	
6	
9	

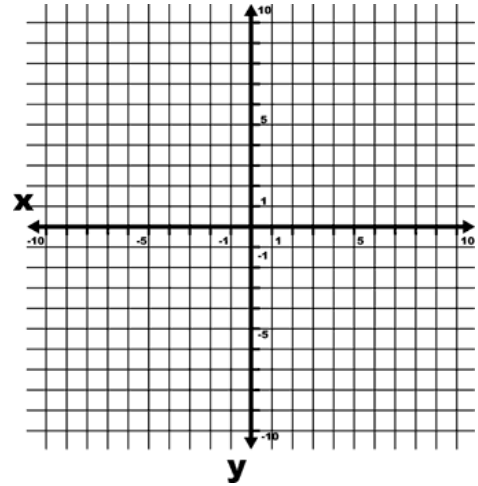
Slope = _____



40) $y = -\frac{1}{2}x + 5$

x	y
-6	
-2	
0	
4	
8	
10	

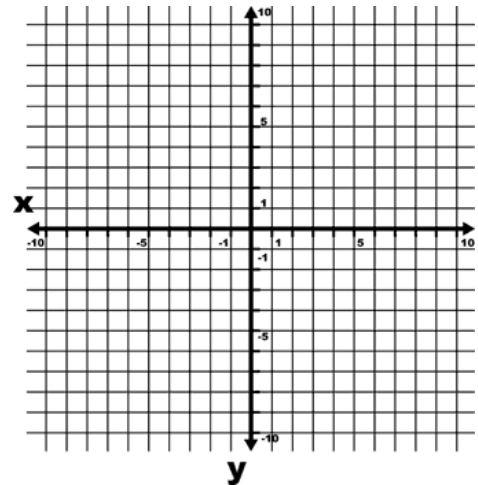
Slope = _____



41) $y = x + 2$

x	y
-4	
-3	
0	
1	
4	
6	

Slope = _____



42) $y = -3x - 1$

x	y
-3	
-1	
0	
1	
2	
3	

Slope = _____

