

UNIT 8: IDENTIFY AND WORK WITH SIMPLE ARITHMETIC SERIES

Exercise 8.1



Work on your own. Do the exercises as classwork or homework.

1. An arithmetic sequence has a first term of 10, and a common difference of 4. Calculate the 18th term.
2. An arithmetic sequence has 280 terms. The first term is 4 and the last term is 841. Calculate the common difference the series.
3. An arithmetic series starts 7; 13; 19 and has 10 terms.
 - a. Find the common difference.
 - b. Find the last term
4. The first term of an arithmetic sequence is 4 and the common difference is 5. Find the term number 10.
5. An arithmetic sequence has a common difference of 4, and the 6th term is 28. Find the first term
6. An arithmetic sequence has a first term of 2, and the common difference is 3.
 - a. Find the term number 17
 - b. The last term is 86. How many terms are there in the sequence?
7. An arithmetic sequence has a first term of 2, a common difference of 6 and it has 29 terms. Calculate the last term of the series.
8. An arithmetic sequence has 170 terms. The first term is 5 and the last term is 1357. Calculate the common difference of the series.
9. An arithmetic sequence starts 2, 7, 12 and has 210 terms.
 - a. Find the common difference
 - b. Find the last term.
10. The first term of an arithmetic sequence is 1 and the last of 15 terms is 57. Find the common difference.
11. An arithmetic sequence has a common difference of 2 and the first term is 18. Find the 12th term.
12. An arithmetic sequence has a first term of 2, and the common difference is 4.
 - a. Find the term number 14
 - b. Find the sum of the 14th plus the 16th terms

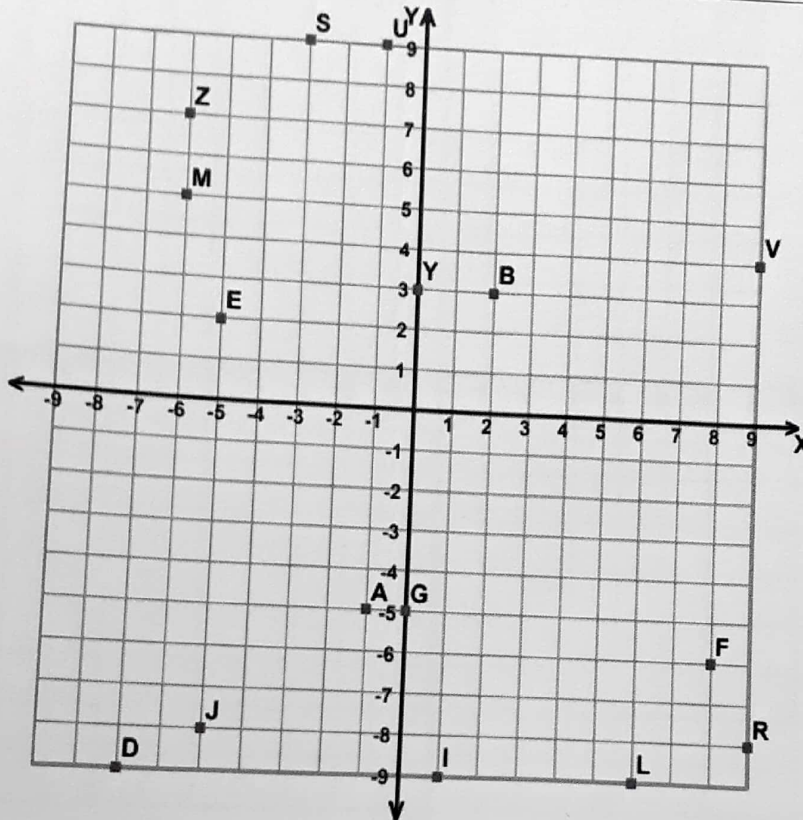
UNIT 9: THE CARTESIAN SYSTEM

Exercise 9.2.1



Work on your own. Do the exercises as classwork or homework.

Answer the questions for the Cartesian Plane. File all your work behind this page.



Tell what point is located at each ordered pair.

- 1) $(6; -9)$ _____ 2) $(-3; 9)$ _____ 3) $(-5; 2)$ _____ 4) $(-1; -5)$ _____ 5) $(-7; -9)$ _____ 6) $(-1; 9)$ _____ 7) $(9; -8)$ _____ 8) $(1; -9)$ _____

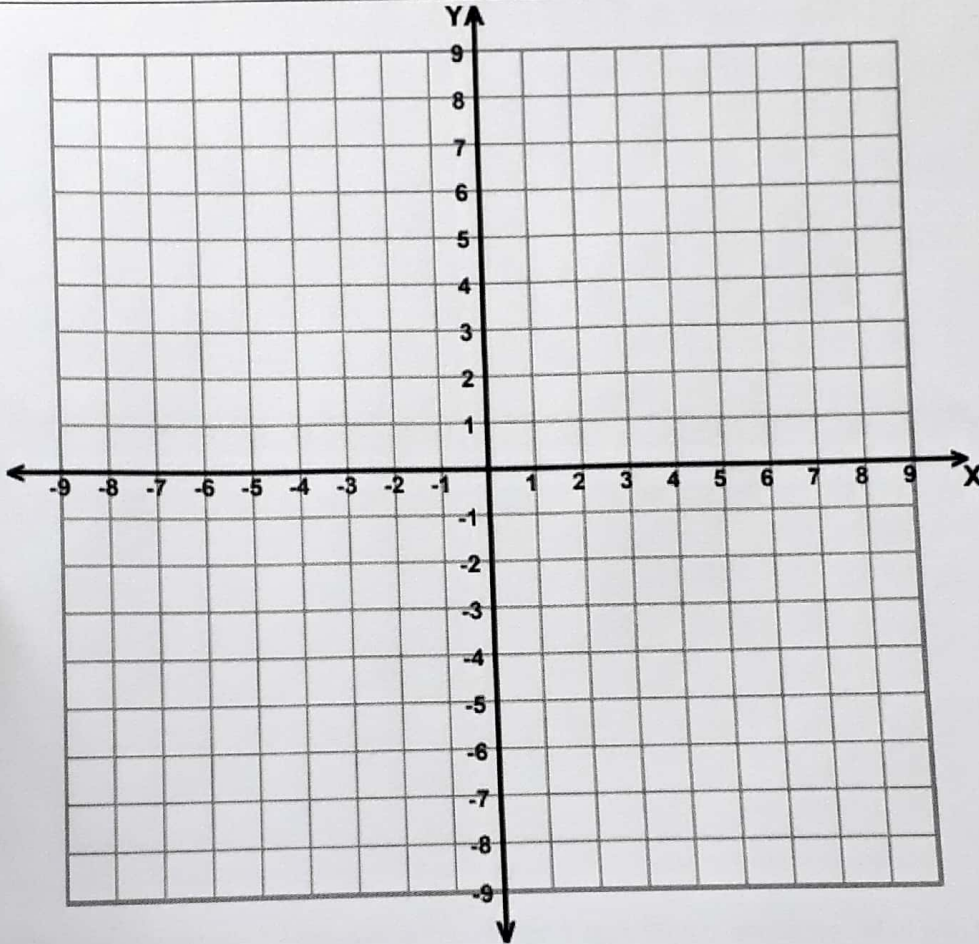
Write the ordered pair for each given point.

- 9) G _____ 10) M _____ 11) F _____ 12) V _____ 13) Z _____ 14) J _____ 15) Y _____
 16) B _____

Plot the following points on the same coordinate grid.

- 17) $T(3; -4)$ 18) $H(0; -7)$ 19) $X(6; 9)$ 20) $C(4; -8)$ 21) $K(-8; -5)$ 22) $N(3; 7)$ 23) $Q(8; -5)$
24) $O(-8; 2)$

Now let's have some fun! Connect each sequence of points with a line. When it says "End of sequence", start with the next sequence of points.



$(-3; 0), (-4; -1), (-6; -2), (-6; -3), (-5; -4), (-4; -4), (-3; -4), (1; -2)$. End of Sequence.

$(-1; 1), (5; 3), (6; 5), (7; 5), (7; 3), (9; 2), (8; 1.5), (6; 2), (2; -5)$. End of Sequence

$(-5; -3), (-5.5; 0), (-5; 0), (-5; -6), (-4.5; -6), (-5; -3)$. End of Sequence

$(-9; 3), (-7; 4), (7; -3), (5; -4), (-9; 3)$. End of Sequence.

$(-6; -2), (-4; -3), (-2; -2), (-1; -1)$. End of Sequence

$(5; 3), (4; 4), (4.5; 4.5), (5.5; 4)$. End of Sequence

$(-4; -1), (-2; -2)$. End of Sequence.

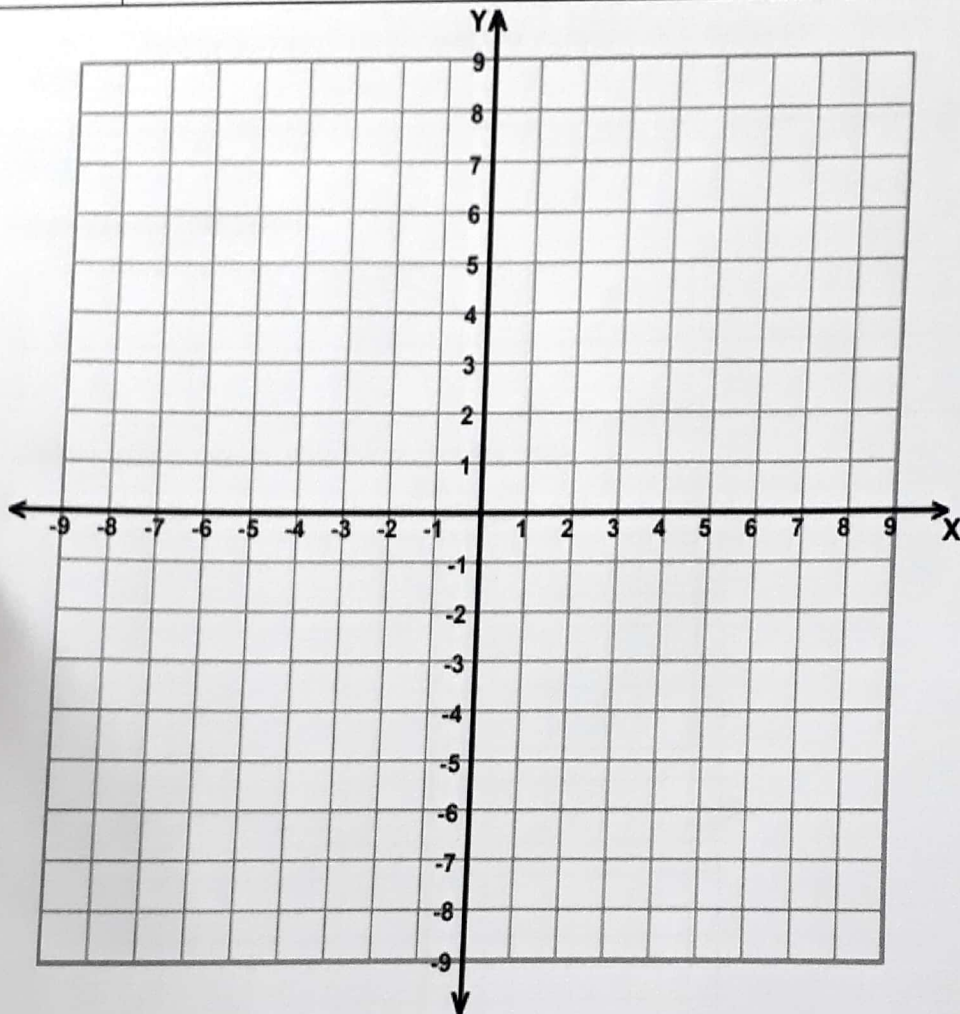
What did you get a picture of?

<http://moorespage.weebly.com>

Exercise 9.2.2



Work on your own. Do the exercises as classwork or homework.



Connect each sequence of points with a line. When it says "End of sequence", start with the next sequence of points.

$(3; 3), (3; 1), (-6; -8), (-8; -8), (-8; -6), (1; 3), (3; 3)$. End of sequence.

$(1; -1), (5; -3), (7; -7), (3; -5), (0; -2)$. End of sequence.

$(-1; 1), (-3; 5), (-7; -7), (-5; 3), (-2; 0)$. End of sequence.

$(-1; -3), (1; -7), (5; -9), (3; -5), (0; -2)$. End of sequence.

$(-3; -1), (-7; 1), (-9; 5), (-5; 3), (-2; 0)$. End of sequence.

$(3; 1), (7; 2)$. End of sequence. $(1; 3), (2; 7)$. End of sequence. $(-7; -5), (-5; -7)$. End.

$(-6; -4), (-4; -6)$. End. $(2; 1)$. End. $(1; 2)$. End.

UNIT 10: STRAIGHT LINE GRAPHS

Exercise 10.3.1



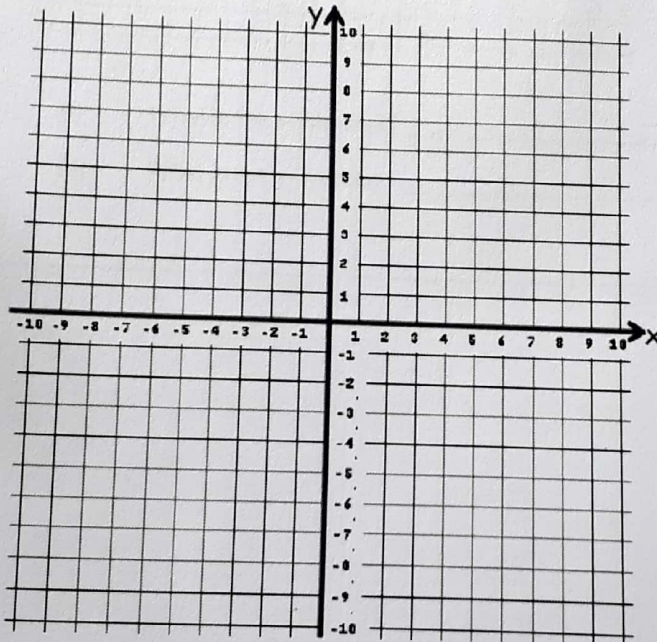
Work on your own. Do the exercises as classwork or homework.

1. $y = x + 5$

Complete the table below:

x	-2	-1	0	1	2
y					

Use the table to plot and draw the straight-line graph.



(i) What is the y -intercept? _____

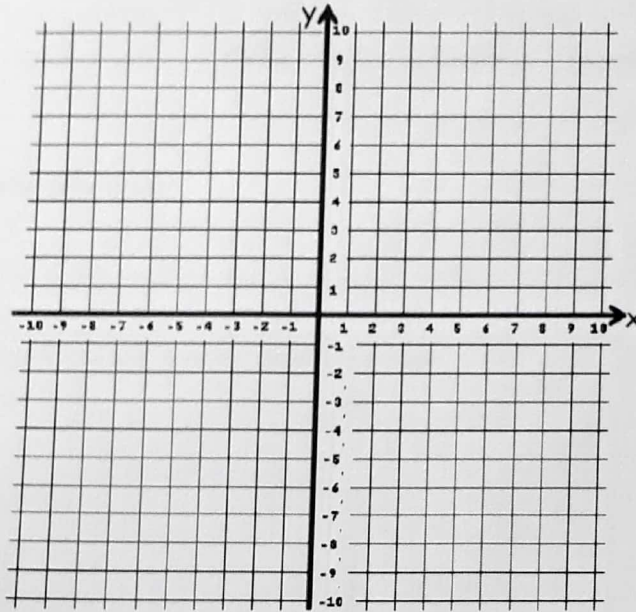
(ii) What is the x -intercept? _____

2. $y = x + 6$

Complete the table below:

x	-2	-1	0	1	2
y					

Use the table to plot and draw the straight-line graph.



- (i) What is the y -intercept? _____
- (ii) What is the x -intercept? _____

Exercise 10.4.1



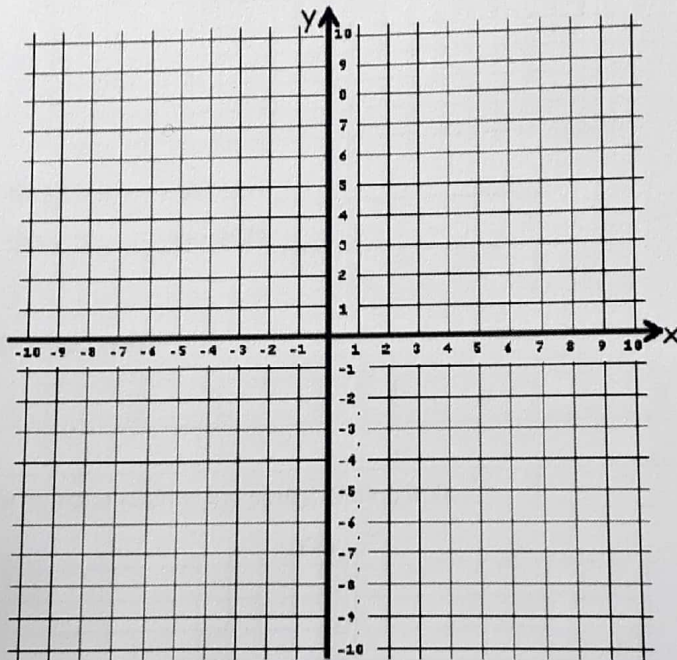
Work on your own. Do the exercises as classwork or homework.

1. $y = 8 - x$

Complete the table below:

x	-2	-1	0	1	2
y					

Use the table to plot and draw the straight-line graph.



(i) What is the y -intercept? _____

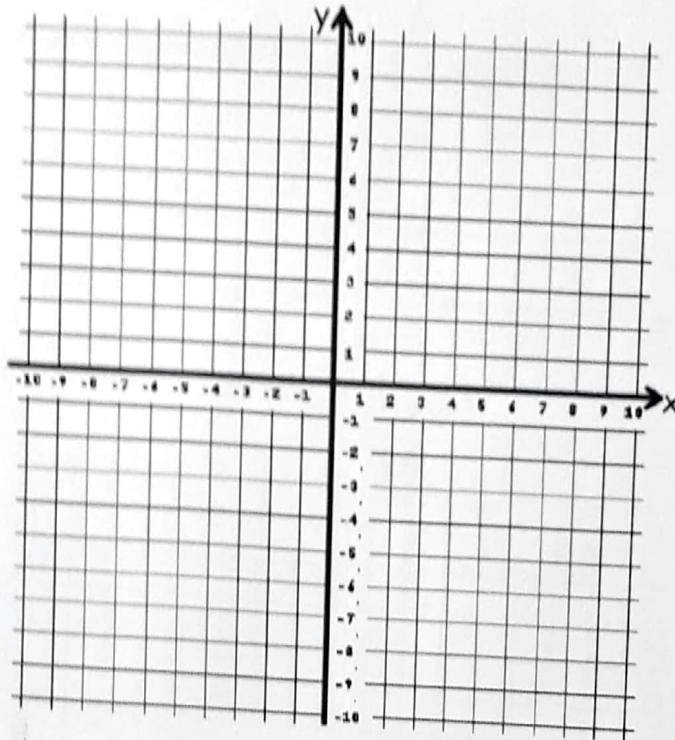
(ii) What is the x -intercept? _____

2. $y = 6 - 2x$

Complete the table below:

x	-2	-1	0	1	2
y					

Use the table to plot and draw the straight-line graph.



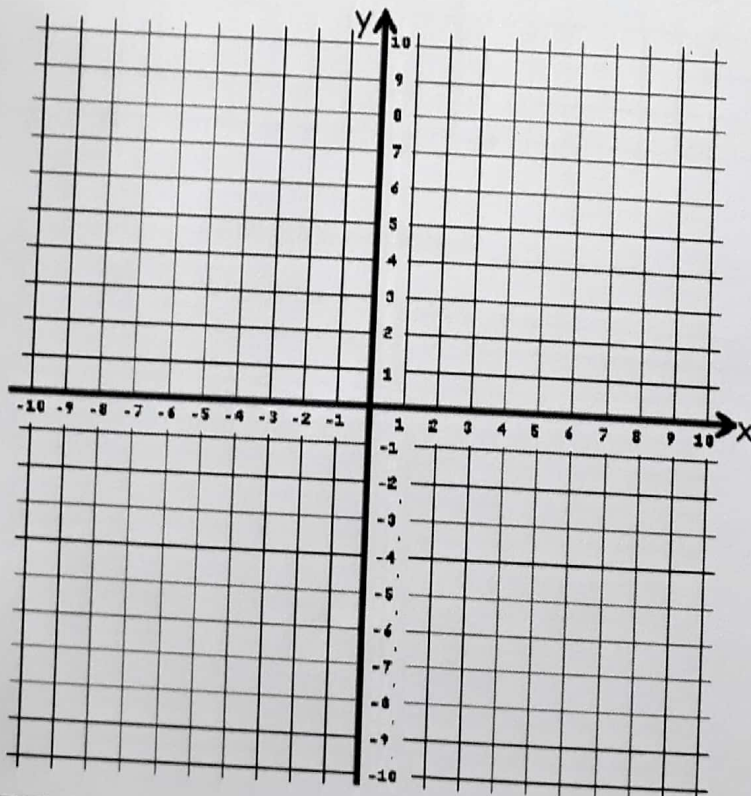
- (i) What is the y-intercept? _____
- (ii) What is the x-intercept? _____

3. $y + x = 5$

Complete the table below:

x	-2	-1	0	1	2
y					

Use the table to plot and draw the straight-line graph.



(i) What is the y -intercept? _____

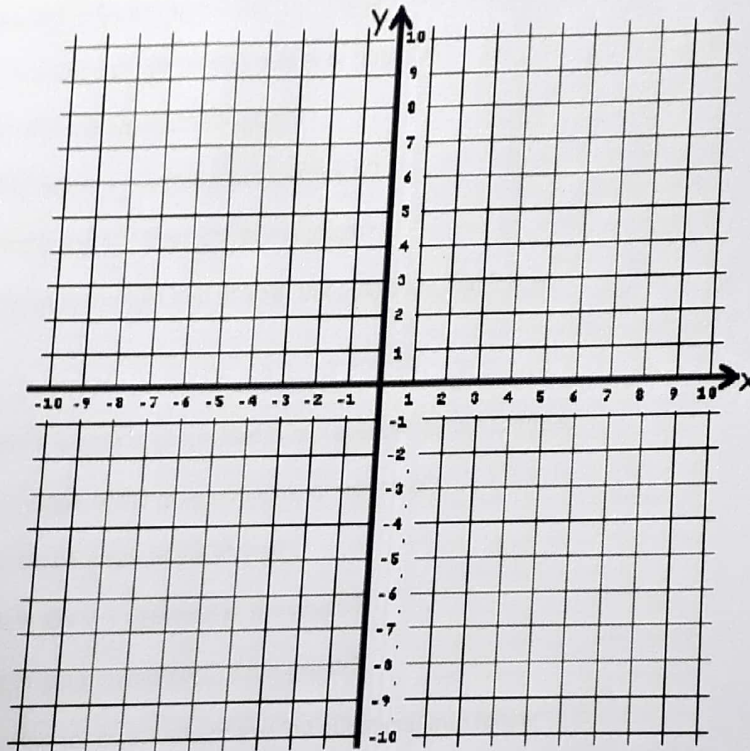
(ii) What is the x -intercept? _____

4. $y + x = 7$

Complete the table below:

x	-2	-1	0	1	2
y					

Use the table to plot and draw the straight-line graph.



(i) What is the y -intercept? _____

(ii) What is the x -intercept? _____

Exercise 10.4.2



Work on your own. Do the exercises as classwork or homework.

1. Study the following formula and answer the questions that follow:

$$y = 3x + 2$$

- (i) Name the type of graph that is represented by the formula.
- (ii) Is the slope of the graph positive or negative?
- (iii) What is the value of the slope?
- (iv) What is the y – intercept of the graph?
- (v) What is the x – intercept of the graph?

2. Study the following formula and answer the questions that follow:

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

- (i) Name the type of graph that is represented by the formula.
- (ii) Is the slope of the graph positive or negative?
- (iii) What is the value of the slope?
- (iv) What is the y – intercept of the graph?
- (v) What is the x – intercept of the graph?

3. Study the following formula and answer the questions that follow:

$$y = x$$

- (i) Name the type of graph that is represented by the formula.
- (ii) Is the slope of the graph positive or negative?
- (iii) What is the value of the slope?
- (iv) What is the y – intercept of the graph?
- (v) What is the x – intercept of the graph?

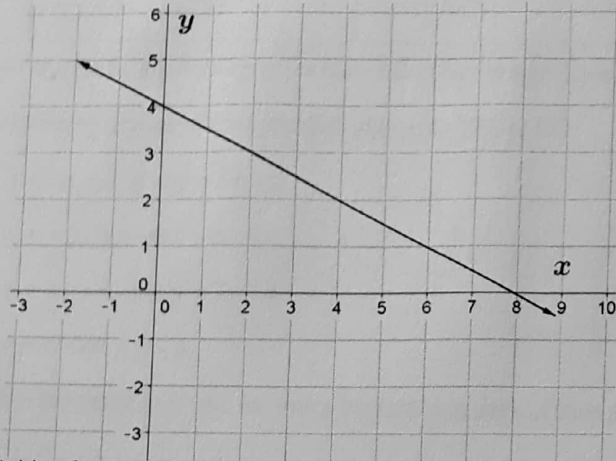
4. Study the following formula and answer the questions that follow:

$$y = 5$$

- (i) Name the type of graph that is represented by the formula.
- (ii) Is the slope of the graph positive or negative?

- (iii) What is the value of the slope?
- (iv) What is the y - intercept of the graph?
- (v) What is the x - intercept of the graph?

5. Study the graph below and determine its gradient.



6. Use the table of values given to determine the gradient of graph:

x	-4	-3	-2	-1	0	1	2	3	4
$y (2x)$	-8	-6	-4	-2	0	2	4	6	8

Exercise 10.4.3



Work on your own. Do the exercises as classwork or homework.

1. How can you tell by just looking at the formulas of two straight lines if they are parallel or not?
2. Are the following groups of lines parallel? Just write YES or NO:
 - (i) $y = 5x + 2$ and $y = 5x - 3$
 - (ii) $y = -2x + 1$ and $y = -2x$
 - (iii) $y = 4x + 4$ and $y = 2x + 4$
 - (iv) $y = 3$ and $y = -4$
3. Write down the value of m that will make the following pairs of lines perpendicular:
 - (i) $y = \frac{1}{4}x + 2$ and $y = mx + 2$
 - (ii) $y = -2x + 4$ and $y = mx + 4$
 - (iii) $y = -\frac{2}{3}x$ and $y = mx - 2$

UNIT 11: QUADRATIC FUNCTIONS

Exercise 11.3.1



Work on your own. Do the exercises as classwork or homework.

Use a table to draw the graphs of the parabolas of the equations given. For each, indicate

- The axis of symmetry
- The x - and the y -intercepts
- The turning point..

1. $y = x^2 - 1$

2. $y = -x^2 + 1$

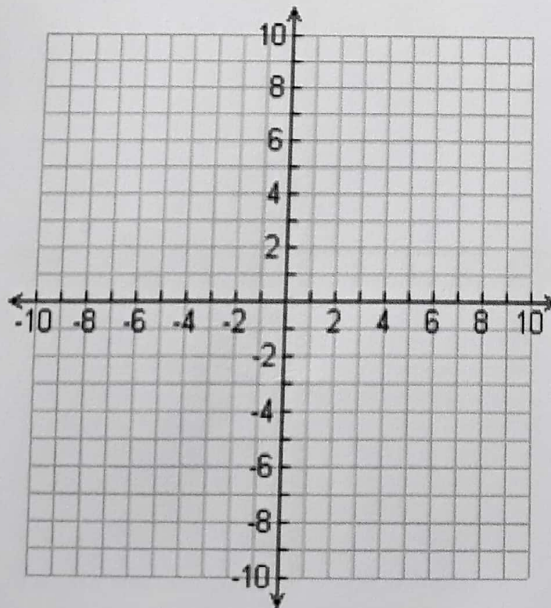
3. $y = -\frac{1}{2}x^2 + 2$

4. $y = x^2 + 1$

5. $y = x^2 - 4$

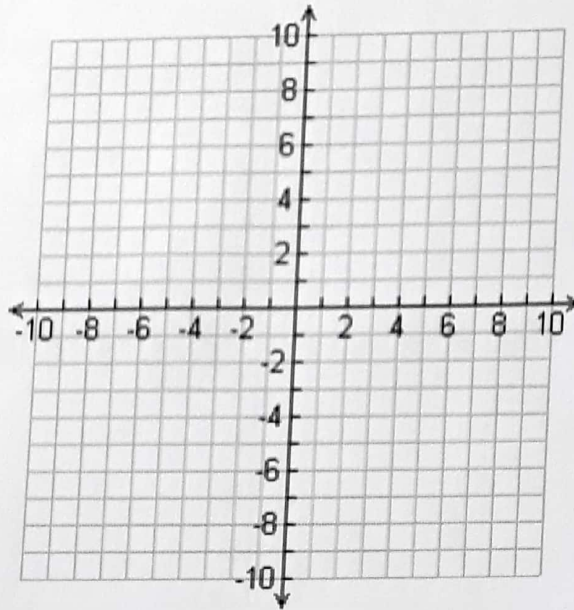
6. $y = x^2 - 1$

x	-3	-2	-1	0	1	2	3
y							



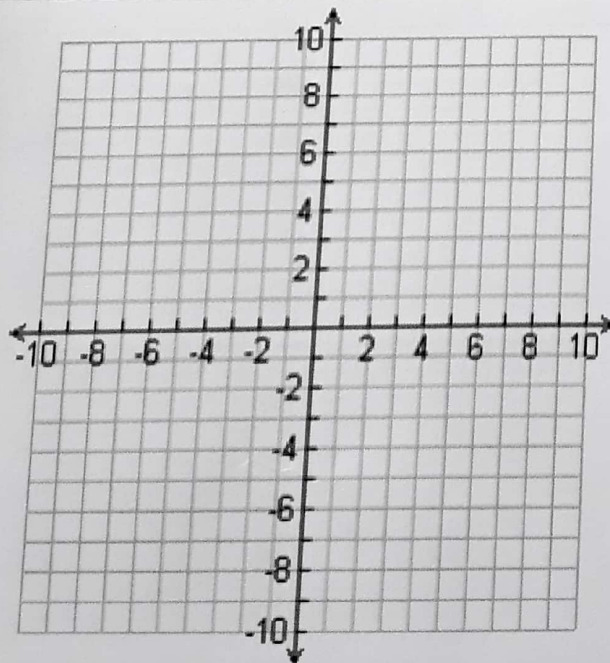
7. $y = -x^2 + 1$

x	-3	-2	-1	0	1	2	3
y							



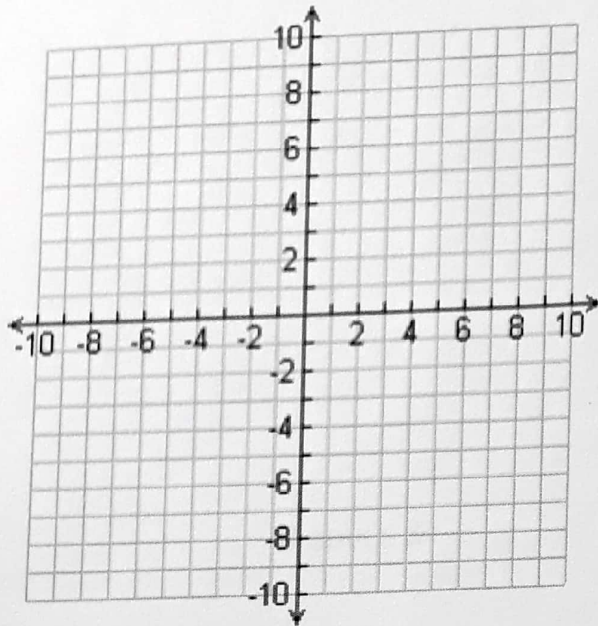
8. $y = -\frac{1}{2}x^2 + 2$

x	-4	-3	-2	-1	0	1	2	3	4
y									



9. $y = x^2 + 1$

x	-3	-2	-1	0	1	2	3
y							



10. $y = x^2 - 4$

x	-3	-2	-1	0	1	2	3
y							

