

Integers:

(Don't forget to add the correct units to your answer... such as \$, m and so on).

1. Determine the correct integer for the following:

- a) Mya spent \$15.00 at the store.
- b) The boat was 7 meters above sea level.
- c) At the hotel, I went from the main level to the garage level in the elevator.
- d) The temperature today was 5 below zero.
- e) I deposited \$245.00 into my bank account.
- f) I added 15 books to my shopping cart.
- g) Gregory made his two foul shots in basketball.
- h) The plane was 2000 meters above ground.

2. Think of 5 situations of your own using integers.

3. What is the opposite integer of the following?

- a) -25 b) +450 c) +65 d) -4678

4. Draw a number line using the following integers.

9, -9, 0, -4, 6, -2, -7

5. Put the following integers in order from greatest to least.

-75, -43, 34, 28, -35, 0, 14, 36, -54

6. Which of the following numbers in the set below are greater than -3?

-10, -5, -7, 0, 16, 2, -4, 3

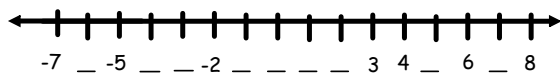
7. Compare each set of integers using < or >.

a) -3 -9 b) 9 -5 c) 4 0

d) -5 5 e) 0 -2 f) 1 -4

g) 8 6 h) 7 -9 i) -9 0

8. Fill in the blanks:



Example of input/output machine:

Input	Output
1	11
2	13
3	15
4	17
5	19

$$2n + 9$$

↑
expression

In input output machines, you are trying to find out what operator/operators (+, -, \div , \times) are used to go from the number given for the input to the number given in the output. Please remember, that whatever operator/operators you used to get from 1 to 11, you need to use the same operator/operators to get from 2 to 13 and so on.

How to find the expression in a input/output machine:

1. First check to see if all your numbers in the input column go up by 1's. In this case, it goes up by 1's! If they do not go up by 1's, that means you will need to do some trial and error to figure out the operators being used.
2. Next, look at your output. What is the pattern between these numbers? In this case, the numbers are **adding by 2** each time.
3. Since these numbers are **adding by 2 each time**, this means we now have the beginning part of our expression. This will be shown as $2n$. The variable "n" in this expression represents any number that comes from the input section of the machine.
4. Finally, to find the rest of the expression, we are going to put "1" to represent our "n" in our $2n$ expression and solve. $2n = 2(1) = 2$. Now we take this 2 and we ask ourselves, what do I need to do to that 2 to get to 11 (our output number)? Well, we need to **add 9** to it. Therefore, we add that to our expression $2n + 9$.
5. Using this trick to help find the expression, makes finding the results of outputs from inputs in the higher ranges much easier and faster to figure out. For example, now that we have our expression for this particular input/output machine, we can now figure out what the output would be if the input was 22.

$$\begin{aligned}
 &2n + 9 \\
 &= 2(22) + 9 \\
 &= 44 + 9 \\
 &= 53
 \end{aligned}$$

So if we were given the input of 22, we know by using this expression that the output would be 53.

Input/Output Machines

1.

Input	Output
1	16
2	32
3	48
4	64
5	80

Input	Output
1	7
2	10
3	13
4	16
5	19

Input	Output
1	22
2	29
3	36
4	43
5	50

- Determine the input pattern for each machine above.
- Determine the output pattern for each machine above.
- Determine the relation between the input to the output for each machine above.
- What are the two operators for each machine above?
- Find the expression for each machine above.
- What would the output be for each machine if the input was 8?

- 2a) Determine the input pattern for each machine below.
- b) Determine the output pattern for each machine below.
- c) Determine the relation between the input to the output for each machine above.
- d) Determine the missing numbers.
- e) What would your new output be if your input was 48?

i)

Input	Output
0	1
8	
16	
	4
32	5

ii)

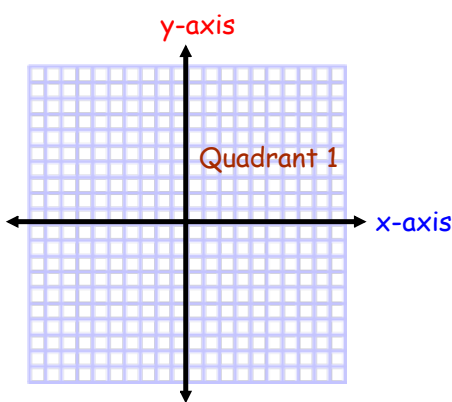
Input	Output
11	33
12	37
13	
	44
15	

3. Ian mows lawns for a summer job. He charges \$25.00 a mow.

He will also look after maintaining flower beds for \$8.00/flower bed.

- a) Draw a table to show how much Ian would make, if one customer asked him to mow and maintain 5 flower beds.
- b) Determine the expression for your table?
- c) How much money will Ian make if this same customer asked him to mow and maintain 8 flower beds?

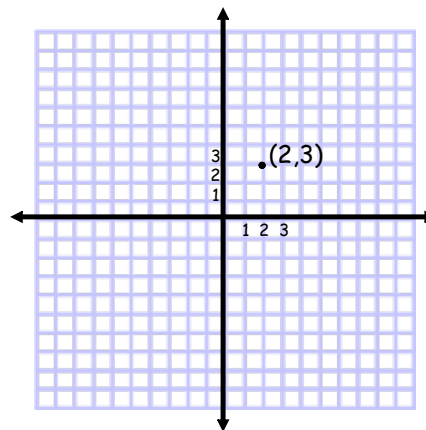
Plotting Coordinates in Quadrant 1 of Cartesian plane:



(x, y) ← Proper way to label a coordinates.
 $(2, 3)$ ← Ordered pair

- Since we are only working in quadrant 1, we are only going to work with positive numbers. Therefore, the ordered pairs you are going to be working with are all going to be positive.
- The first number given in an ordered pair tells you which way you are going to move horizontally across the x-axis. In this case, our number is positive, so we will be moving 2 squares to the right across the x-axis.
- The second number given in an ordered pair tells you which way you are going to move vertically along the y-axis. In this case, our number is positive, so we will be moving 2 squares up the y-axis. This is where you will plot your point.

This ordered pair is called the origin.
 $(0,0)$ ← The origin is where both the x-axis and y-axis intercept.



Drawing Angles:

1. Using the following measurements, draw an acute angle with a ruler and protractor.

a) 42° b) 65° c) 15° d) 84° e) 45° f) 77°

2. Using the following measurements, draw an obtuse angle with a ruler and protractor.

a) 117° b) 97° c) 178° d) 150° e) 165° f) 144°

3. Using the following measurements, draw a reflex angle with an ruler and protractor.

a) 199° b) 235° c) 272° d) 304° e) 341° f) 359°

