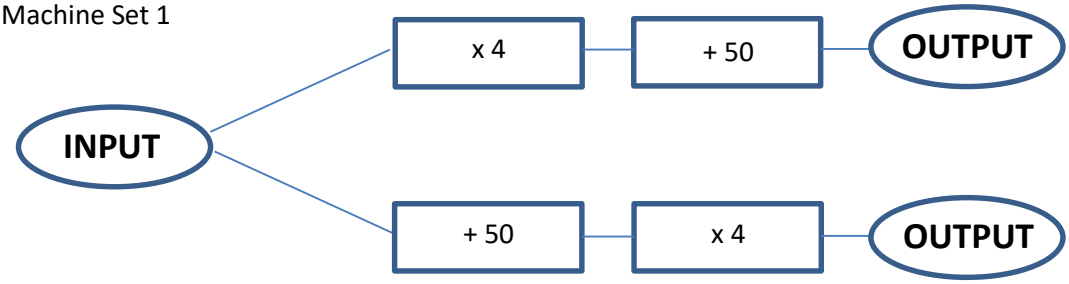
Investigation Name: _____

Recap

So far we have looked at whether the machines below gave the same or different outputs.

Machine Set 1

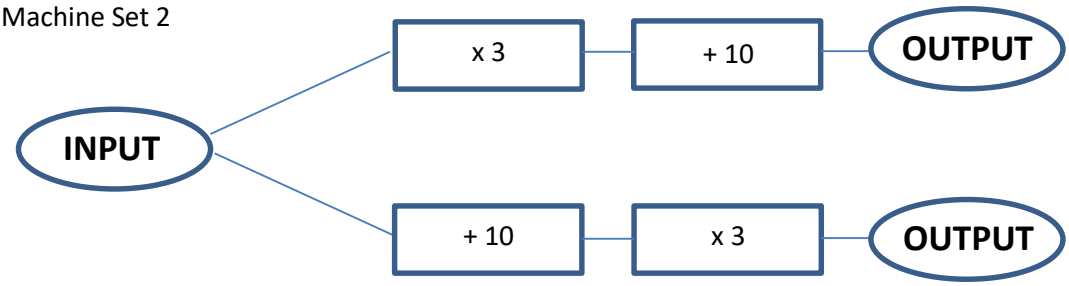


We decided that these machines give different outputs after trying some different inputs.

	x 4 + 50	+ 50 x 4
2	58	208
5		
12	98	
13		252

However, we noticed that the difference in outputs was always _____

Machine Set 2



We decided that these machines give different outputs after trying some different inputs.

	x 3 + 10	+ 10 x 3
2	16	36
5	25	
6		48
10		

However, we noticed that the difference in outputs was always _____

Today's Task

Can you find two machines which always give outputs with a difference of 20?

You will need to make up the machines and then draw up a table of values to prove this.

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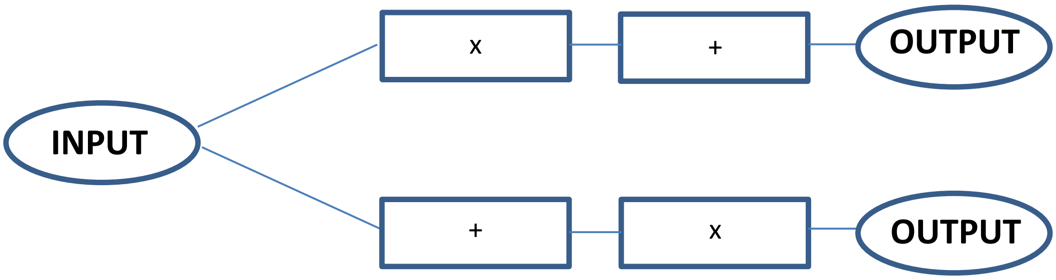
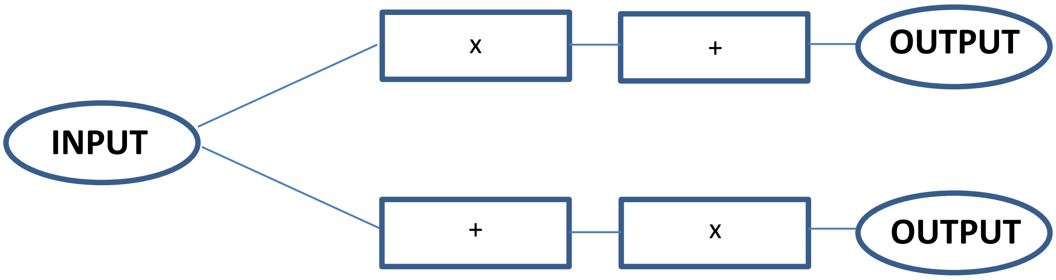
Machines with a difference of 20



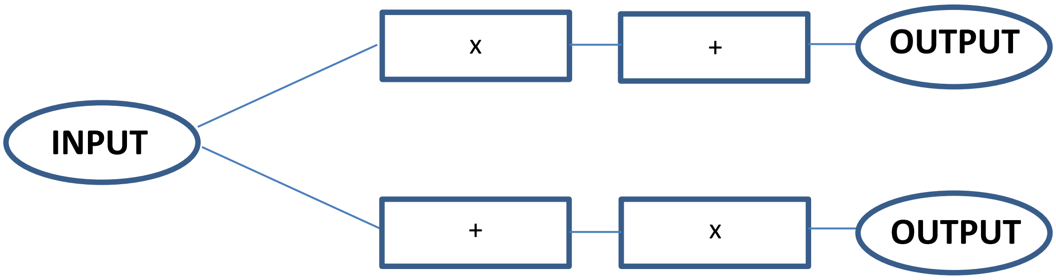
	x +	+ x
2		
5		
10		

Machines with a difference of 20



	x +	+ x
2		
5		
10		

Machines with a difference of 20



	x +	+ x
2		
5		
10		

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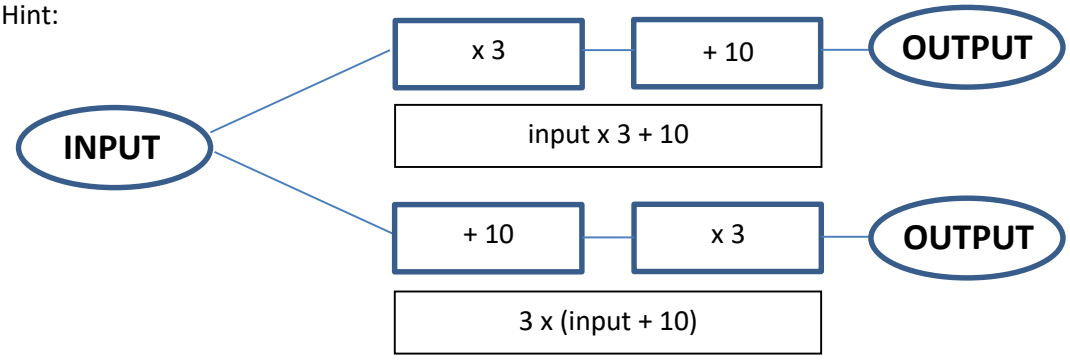
Task Two

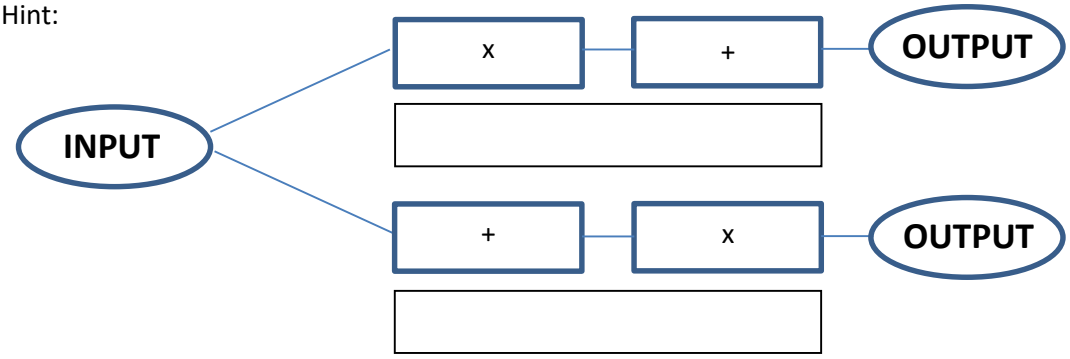
Can you figure out why the difference is always 20 for your machines?

Hint:

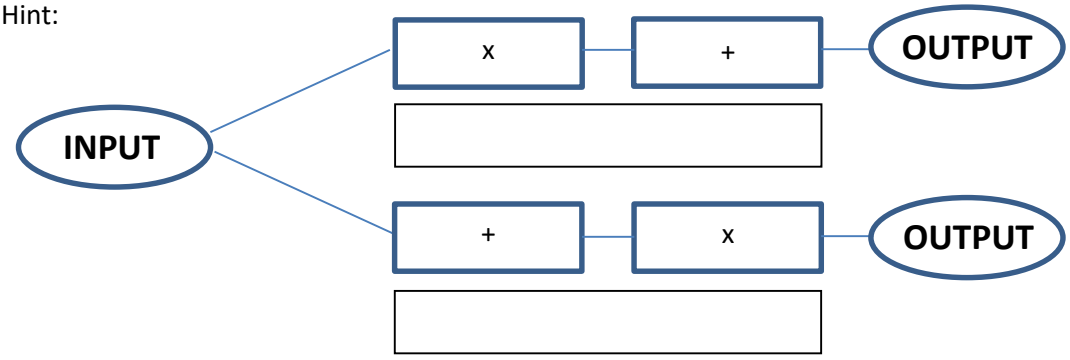


Complete these diagrams for your two machines:

Hint:



Hint:



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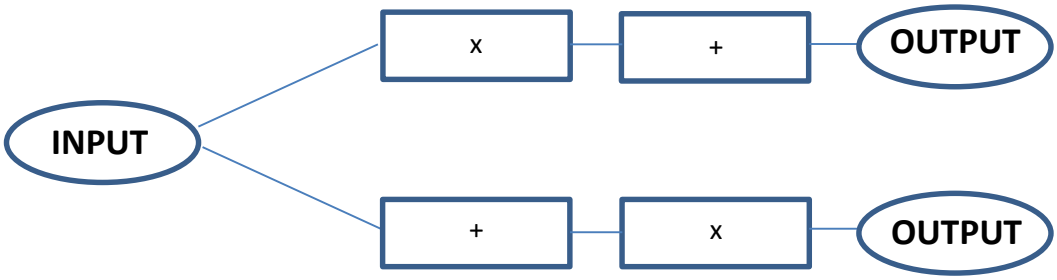
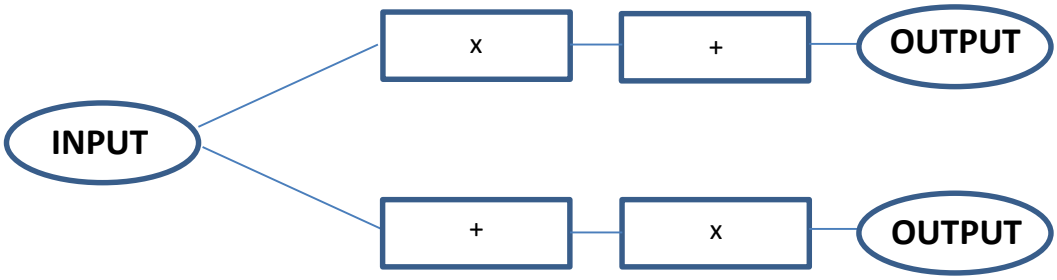
Extension: Can you find two machines which always give outputs with a difference of 21?
Can you prove why the difference is always 20 for your machines?

Machines with a difference of 21



	x +	+ x
2		
5		
10		

Machines with a difference of 21



	x +	+ x
2		
5		
10		