

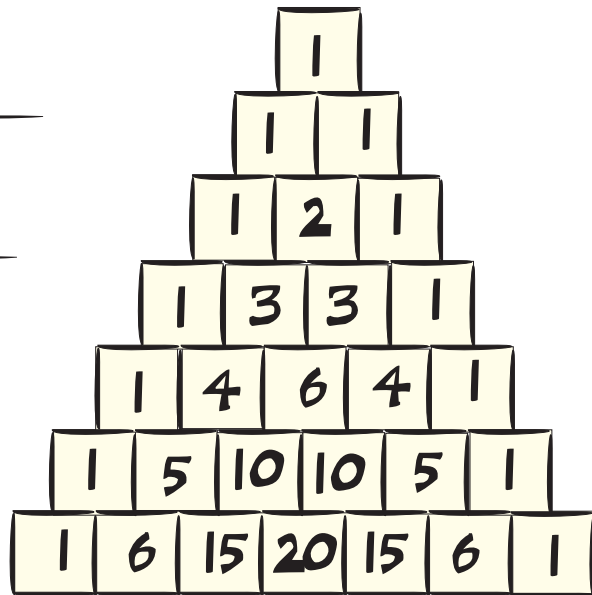
Year 9 - Worksheet 2

Substitute $x = 6$ and $y = 3$ then evaluate each expression.

1. $3x$	_____	6. $3x - 2y$	_____
2. $x + y$	_____	7. $\frac{x - y}{2}$	_____
3. $2x + 3y$	_____	8. $\frac{18}{x - y}$	_____
4. $\frac{x}{2} + y$	_____	9. $\frac{x}{y}$	_____
5. $2(x + y)$	_____	10. $\frac{3x}{2y}$	_____

For the following sequences, give the next three numbers.

- 2, 4, 6, 8, _____, _____, _____
- 18, 16, 14, 12, _____, _____, _____
- 1, 4, 7, 10, _____, _____, _____
- 7, 13, 19, 25, _____, _____, _____
- 1, 3, 5, 7, 9, _____, _____, _____



How many different number sequences can you identify in the pyramid figure above?

SUDOKU

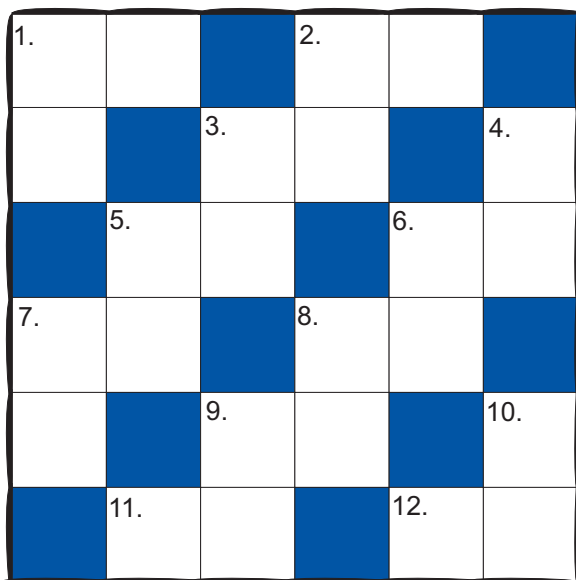
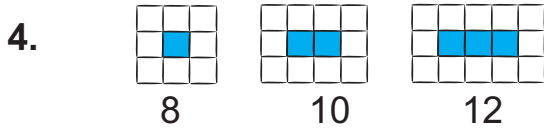
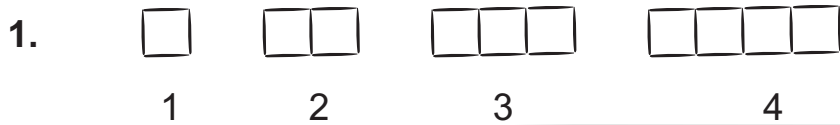
7	6			3			9	1
5	9		1		7			4
	1	8		9		3		
9	7		3	5			6	
3			6	4	2	9		7
	2		7	8			1	
2		9				1		
8			2	1	4			9
1	4		9	6			2	5

PUZZLE

How many years old is a person if her age now is equal to her age in 3 years \times 3, less 3 times her age 3 years ago?

MORE SEQUENCES

Draw the next pattern to each of the sequences.



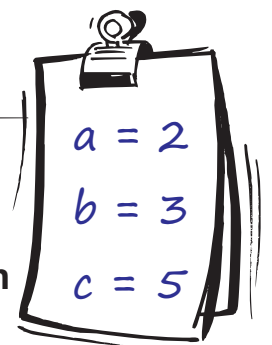
CROSS NUMBER

Across

1. $6a$
2. $5b$
3. $3b + a$
5. $4b + a$
6. $6c + a$
7. $11b + a$
8. $3c - b$
9. $8b - a$
11. $2c$
12. $4c - a$

Down

1. $3c$
2. $9 + a$
3. $7a$
4. $3c - b$
5. $3c$
6. $12b - 2a$
7. $9b + 2a$
8. $4b$
9. $5c - (b + a)$
10. $6c - a$



TEN QUICK QUESTIONS

Write the next 3 numbers in the sequences.

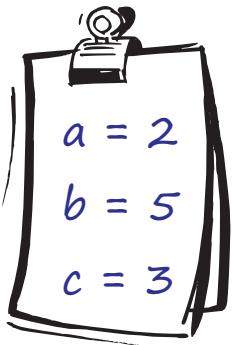
- 1, 3, 5, 7, _____, _____, _____
- 20, 17, 14, 11, _____, _____, _____
- 3, 6, 12, 24, _____, _____, _____
- Simplify $4b + 3b$ _____
- Simplify $3a \times 4a$ _____
- Simplify $\frac{a^6}{a^2}$ _____
- If $a = 3$, calculate $2a - 6$ _____
- Simplify $7a + 2b - 3a - b$

- If $a = 4$ and $b = 2$ calculate $3(3b - a)$.

- Work out $\frac{(a + b)}{2}$ given that $a = 4$, $b = 2$.

ESSENTIAL SKILLS

Substitute the values into each expression.



- | | | | | | |
|----|---------------------|-------|-----|----------------|-------|
| 1. | $10a - c$ | _____ | 6. | $(2a + b)^2$ | _____ |
| 2. | $5ab - 3c$ | _____ | 7. | $2a^2$ | _____ |
| 3. | $3(a + b)$ | _____ | 8. | $5b - c$ | _____ |
| 4. | $\frac{3a - b}{2c}$ | _____ | 9. | $8a^2 - 3c^2$ | _____ |
| 5. | $(b - 2)^2$ | _____ | 10. | $4(6c - 3b)^2$ | _____ |

WHAT IS THE UNIVERSE MADE OF?

Simplify the following expressions. Use your answers to complete the question.

1. $5x^3 \times 2x^2 \times 2$ E

2. $(2x^2)^3$ G

3. $\sqrt{9x^{12}}$ C

4. $3x^2 \times 8x^5$ A

5. $(3x)^2$ R

6. $x^6 \div x^3$ Y

7. $\sqrt{64x^2}$ I

8. $2x^2 \times 2x^4 \times x$ T

9. $(2x + 2x)^2$ N

10. $\frac{20x^5}{4x^3}$ P

11. $\frac{5x^7}{x^3}$ S

12. $\sqrt{16x^{16}}$ M

