

Year 9 - Worksheet 5

EQUATION SOLVING

Solve the following equations:

1. $2x + x = 9$

2. $2x + 3x + 2 = 12$

3. $3x - 6 = x$

4. $2x - 1 = x + 3$

5. $5x - 2 = 3x + 8$

6. $12x = x + 11$

7. $7x = 3x + 12$

8. $3x = 2x - 8$

9. $x + 5 = 2x - 3$

10. $2x + 7 = 5x - 2$

EXPANDING BRACKETS

Expand the following:

1. $5(x + y)$ _____

2. $2(x - y)$ _____

3. $3(x + 2)$ _____

4. $4(x - 3)$ _____

5. $-2(x + 4)$ _____

6. $-5(x - 6)$ _____

7. $x(x + 5)$ _____

8. $x(2x - 3)$ _____

9. $3x(2x - 4)$ _____

10. $-5x(3x + 6)$ _____

PUZZLE

There are 4 red and 4 green counters. The object is to interchange the counters so that the green are on the left and red on the right.

Counters can only move in one direction, so red can only move right and green can only move left.

You can only move one space or jump one disc of the other colour.

What is the minimum number of moves needed to make the complete interchange?



TEN QUICK QUESTIONS

Write the next 3 numbers in the sequences:

1. 5, 10, 15, 20, _____, _____, _____
2. 21, 17, 13, 9, _____, _____, _____
3. 1.3, 1.6, 1.9, 2.2, _____, _____, _____
4. 2, 6, 18, 54, _____, _____, _____
5. Simplify $3a \times 2a \times 2a =$ _____
6. Simplify $x^3 \times x^5 =$ _____
7. Simplify $4a - 2b + 3a - b =$ _____
8. If $a = 2$, $b = 3$, calculate $(2a + b) \times 2$

9. If $a = 2$, $b = 3$, calculate $\frac{2a - b}{2}$

10. Find 3 consecutive numbers that sum to 33.

SKILLS

Expand the following (simplify if needed).

1. $2(a + b)$

2. $3(a + b - c)$

3. $-3(a - 2)$

4. $-2(4a - 3)$

5. $x(3x + 4)$

6. $-3x(4x + 2)$

7. $-2x(5x - 2)$

8. $3(x + y) + 2(x + y)$

9. $4(x + y) + 3(x - y)$

10. $2(2x + 4) - 2(x - 3)$

MORE QUICK QUESTIONS

1. Simplify $x^3 \times x^4$

2. Simplify $2x^3 \times 4x^4$

3. Simplify $\frac{x^6}{x^4}$

4. Simplify $\frac{8x^6}{4x^4}$

5. Solve $3x = 15$

6. Solve $x + 3 = -4$

7. Solve $\frac{x}{5} = 6$

8. Solve $x - 4 = 20$

9. Solve $2x - 1 = 5$

10. Solve $3x + 7 = 2x + 9$

TEN QUICK QUESTIONS

Use any strategy but not a calculator.

1. $235 + 141 =$ _____

2. $76 - 68 =$ _____

3. $54 \times 6 =$ _____

4. $43 \times 100 =$ _____

5. $160 \div 5 =$ _____

6. $\$12.08 \div 4 =$ _____

7. $\$2.22 \div 3 =$ _____

8. $\$1.20 + \$2.30 =$ _____

9. $\frac{3}{11} + \frac{4}{11} =$ _____

10. $\frac{8}{9} - \frac{2}{9} =$ _____

ALGEBRA

Complete the chart given the different values of x and y.

x	y	x + y	xy	2x + y	3x - 2y
4	3				
8	5				
4	-2				
-5	-4				

SUDOKU

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