

Year 9 - Worksheet 3

ESSENTIAL SKILLS

Simplify the following:

- | | | | | | |
|----|---------------------|-------|-----|-----------------------------|-------|
| 1. | $2 \times 3x$ | _____ | 6. | $x^2 + x^5$ | _____ |
| 2. | $3x \times 4y$ | _____ | 7. | $x^3 \times x^2 \times x^4$ | _____ |
| 3. | $2x + 5x$ | _____ | 8. | $3x \times 5x^2$ | _____ |
| 4. | $3x + 4y + 2x$ | _____ | 9. | $\frac{x^7}{x^3}$ | _____ |
| 5. | $5x + 4y - 2x - 3y$ | _____ | 10. | $\frac{8x^5}{12x^3}$ | _____ |

TEN QUICK QUESTIONS

Write the next 3 numbers in the sequences.

- 1, 4, 7, 10, _____, _____, _____
- 90, 85, 80, 75, _____, _____, _____
- 1, 4, 9, 16, _____, _____, _____
- 0, 3, 8, 15, _____, _____, _____
- Simplify $2a \times 5a$ _____
- Simplify $x^3 \times x^4$ _____
- Simplify $3b + 2c + b + c$ _____
- If $a = 3$, calculate $2a^2$ _____
- If $a = 4$ and $b = 1$, calculate $\frac{a-b}{2}$

- Find two equal numbers that sum to 28.

PUZZLE

A farmer has 3 bales of hay:
alfalfa, barley and wheat.

Together, the alfalfa and
barley weigh 30kg.

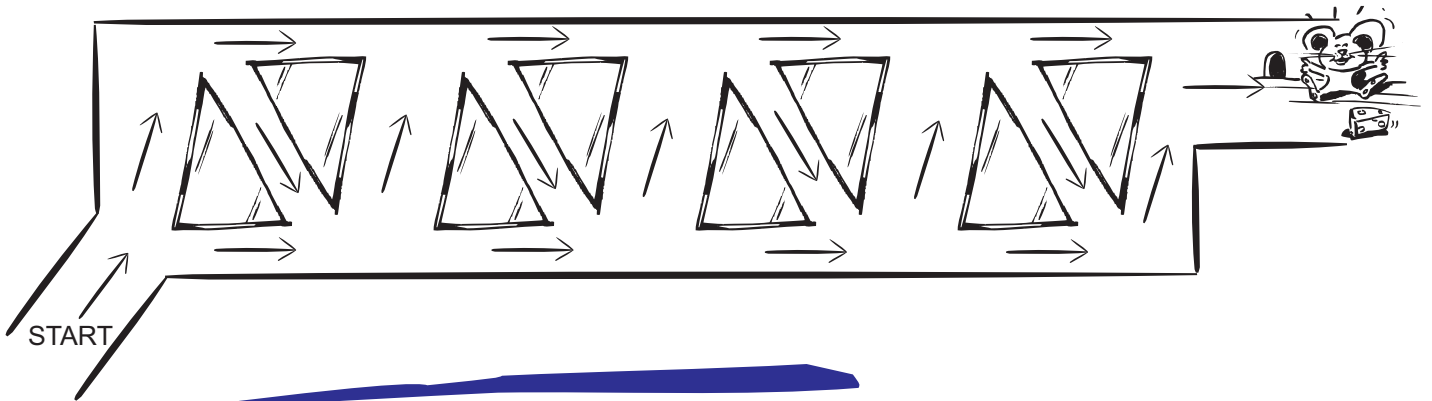
Together, the barley and
wheat weigh 50kg.

Together, the wheat and
alfalfa weigh 40kg.

How much does each weigh?

INVESTIGATION

A mouse can walk through the maze a number of ways. How many ways are there from start to finish?



Simplify these expressions:

1. $x \times x =$ _____

2. $x^2 \times x^3 =$ _____

3. $3x^3 \times 4x^3 =$ _____

4. $x^5 \times x^2 \times x^7 =$ _____

5. $3(x^2 + 2x^2) =$ _____

6. $\frac{x^5}{x^3} =$ _____

7. $\frac{6x^5}{3x^3} =$ _____

8. $\frac{10x^5}{8x^3} =$ _____

9. $\frac{x^3 \times x^5}{x^3} =$ _____

10. $\frac{x^3 + x^3}{x} =$ _____

EQUATION SOLVING

Solve the following equations.

1. $x + 5 = 7$ _____

2. $x - 3 = 8$ _____

3. $3 + x = 4$ _____

4. $7 + x = 11$ _____

5. $2x + 1 = 12$ _____

6. $2x - 3 = 5$ _____

7. $x - 11 = 0$ _____

8. $2x + x - 3 = 6$ _____

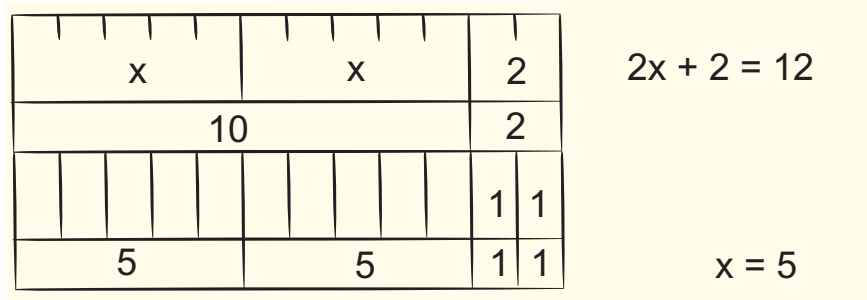
9. $x + 11 = 11$ _____

10. $11 - x = 5$ _____

MORE EQUATION SOLVING

You can solve equations many different ways.

For example, $2x + 2 = 12$ can be represented with equal sized boxes.



Solve the following equations:

1. $2x + 3 = 15$ _____

2. $3x + 1 = 16$ _____

3. $2x + 7 = 9$ _____

4. $2x - 1 = 11$ _____

5. $2x + 7 = x + 8$ _____

6. $3x + 3 = x + 7$ _____

7. $2(x + 1) = 12$ _____

8. $2(x + 3) = 16$ _____

9. $2 + 3x = 17$ _____

10. $5 + 2x = 7$ _____

THE NUMBER SYSTEM

Complete the table below:

	<i>Number</i>	<i>Number written in words</i>
1.	3 906	three thousand nine hundred and six
2.	190	
3.	6 423	
4.	67 599	
5.		one hundred and fifty nine
6.		eight thousand three hundred and fifty
7.		forty four thousand two hundred and twenty one
8.		seven hundred and sixty four thousand
9.	80.5	
10.	5010.3	
11.		twelve and fifteen hundredths
12.		six thousandths

SUDOKU

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

Indicate these numbers on the number lines.

