

1. If  $x = 5$ , evaluate ...
- $3x$
  - $x + 4$
  - $6 - x$
  - $x/5$
  - $\frac{1}{2}(x + 15)$
2. If  $x = 3$ , evaluate ...
- $x^2$
  - $27/x$
  - $15 - 2x$
  - $2x + 3$
  - $2(x + 1.5)$

3. Create five expressions equal to 9, if  $x = 2$ . (e.g.  $4x + 1$ )

4. Below are the prices of some items in a supermarket:



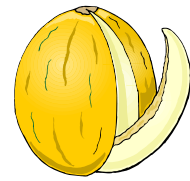
water  
 $w = 80p$



pack of cola  
 $c = \text{£}3.30$



pizza  
 $p = \text{£}2.70$



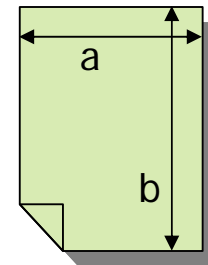
melon  
 $m = \text{£}2.10$

Calculate the cost of:

- $3w$
- $c + p$
- $2m + c$
- $w + c + p + m$

5. The area of this piece of paper is given as:  
 $ab = 24$  ( $a$  and  $b$  are both integers).

Find eight possible sets of values for  $a$  and  $b$ .



6. Here are 4 expressions:

$$x + 1$$

$$x^2$$

$$x^3$$

$$1/x$$

Arrange them into ascending order if ...

- $x = 2$
- $x = -2$
- $x = \frac{1}{2}$

### Extension task

If  $a = 1$ ,  $b = 2$ ,  $c = 3 \dots z = 26$ , find words whose letter sum is ...

- 27
- 24
- 60

Answers

1.

- a.  $3x = 15$
- b.  $x + 4 = 9$
- c.  $6 - x = 1$
- d.  $x/5 = 1$
- e.  $\frac{1}{2}(x + 15) = 10$

2.

- a.  $x^2 = 9$
- b.  $\frac{27}{x} = 9$
- c.  $15 - 2x = 9$
- d.  $2x + 3 = 9$
- e.  $2(x + 1.5) = 9$

3. Examples:

$x + 7$	$2x + 5$	$3x + 3$
$5x - 1$	$6x - 3$	$7x - 5$
$x^2 + 5$	$x^3 + 1$	

4.

- a.  $3w = \text{£}2.40$
- b.  $c + p = \text{£}6.00$
- c.  $2m + c = \text{£}7.50$
- d.  $w + c + p + m = \text{£}8.90$

5.

$a = 1, b = 24$	$a = 2, b = 12$
$a = 3, b = 8$	$a = 4, b = 6$
$a = 6, b = 4$	$a = 8, b = 3$
$a = 12, b = 2$	$a = 24, b = 1$

6.

If $x = 2$ :	$\frac{1}{x}$	$x + 1$	$x^2$	$x^3$
If $x = -2$	$x^3$	$x + 1$	$\frac{1}{x}$	$x^2$
If $x = \frac{1}{2}$	$x^3$	$x^2$	$x + 1$	$\frac{1}{x}$

Extension task

If  $a = 1, b = 2, c = 3 \dots z = 26$ , find words whose letter sum is ...

- a. 27            e.g. ball
- b. 24            e.g. cat
- c. 60            e.g. teacher