

How many of each shape do we have?

1

$$\triangle + \triangle + 2\triangle + 2\triangle =$$

2

$$3\triangle + 4\square + 2\triangle + 2\square =$$

3

$$9\bigcirc - \triangle + \bigcirc + 2\triangle =$$

4

$$5\triangle + 2\square + 7\triangle - 4\square =$$

5

$$9\bigcirc - \triangle + \bigcirc + 2\triangle =$$

How many of each letter do we have?

6.

$$s + s + s + 3s + 2s =$$

7

$$s + t + s + 4t + 2s =$$

8

$$s + 2s + 2s + 3t + 2u + 3u - t =$$

9

$$t^2 + t^2 + 3t^2 + t + 2t + 3t =$$

Shade the t^3 in red and t^2 terms in blue. Simplify the following terms:

10. $t^3 + 3t^2 + 3t^3 + 2t^2 + 3t^3 =$

11. $3t^3 + 6t^2 + 8t^3 + 6t^3 - 7t^3 =$

12. $6t^2 + 4t^2 + 3t^3 + 5t^2 + 4t^2 + t^3 + t^3 =$

13. $7t^2 + 6t^2 + 8t^3 - t^2 + t^3 =$

14. $23t^2 + 18t^3 - 7t^2 - 5t^3 - t^3 - t^2 =$

15. $6t^2 + t^2 + 3t^3 + 2t^2 + 8t^2 + 9t^3 + t^3 =$

16. $t^2 + 7t^3 + 3t^2 + 7t^2 + 6t^3 + t^2 + 4t^3 =$

17. $(11t^3 + 6t^2) - (4t^3 + 5t^2) =$

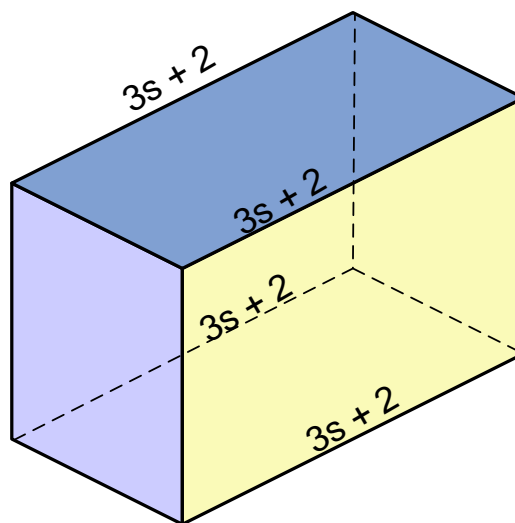
18. $4(3t^3 + 5t^2) - (7t^3 + 4t^2) =$

19. $5(6t^3 + 7t^2) - (8t^3 - 4t^2) =$

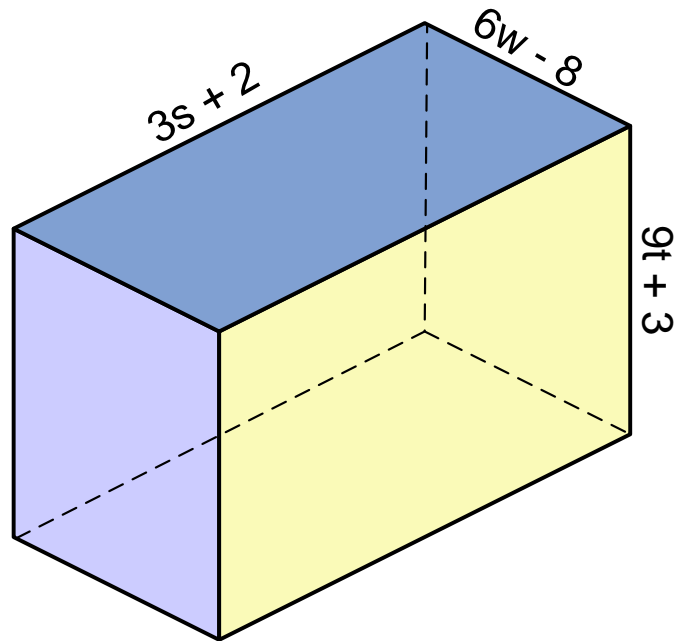
20. $4t(3t^2 + 4t) + 5t^2 + 7t^3 =$

Challenge Questions

21. In terms of s , what is the total length of the edges shown?

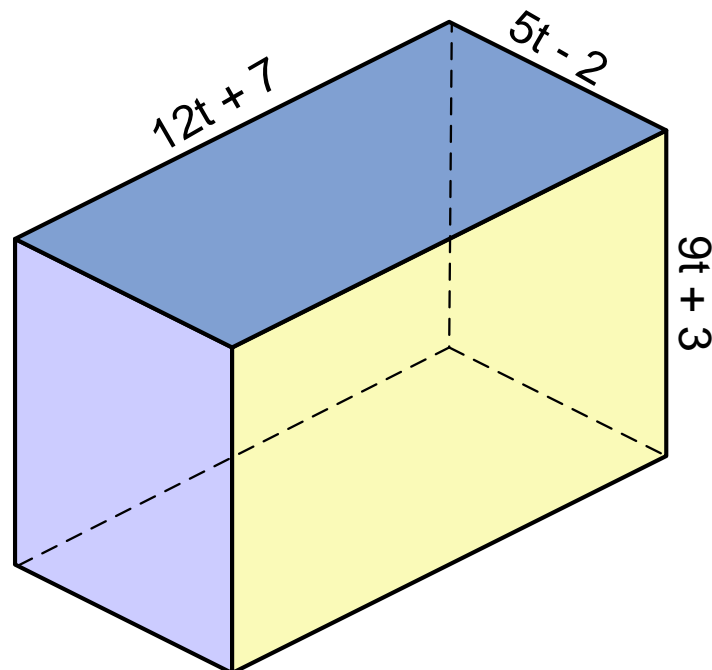


22. What is the total length of the edges of this cuboid?



Hint: Remember that there are four edges of the same measurements for each one marked on the diagram. You will need to add the edges together.

23. What is the total length of the edges in this cuboid?



24. If $t=6$, work out the following:

i. $t + 4 =$

ii. $t^2 =$

iii. $t^2 + 7 =$

iv. $3t^2 =$

v. $2t^2 + 3t =$

vi. $6t + 7t + 2t^2 + 5t^2 =$

25. If $a=4$, $b=7$ and $c=10$ work out the following:

i. $a + b =$

ii. $a + b + c =$

iii. $2a + b =$

iv. $3a + c^2 =$

v. $c^2 - 4b =$

vi. $a^2 + b^2 =$

vii. $a^2 + 3a + a =$

viii. $3a^2 + c =$

ix. $9c - b^2 =$

x. $5a + a + c^2 =$

xi. $b^a =$

xii. $(a + b)^2 =$