Every Letter Gets Its Value

MV02-V1 · storyboard · MV02 Evaluate with several letters. Read each picture with its sentences.

Picture 1

Evaluate $r^2 s$ when $r = 3$ and $s = -2$.

$$3^2(-2)$$ each value in its place

$$= 9 \cdot (-2)$$ only r is squared

$$= \boxed{-18}$$

1. Evaluate r²s when r = 3 and s = −2.
2. Three goes where r is, and negative two, in brackets, where s is.
3. Only r is squared: three squared is nine.
4. Nine times negative two is −18.

Picture 2

Trap $r^2 s, \quad r = 3, \; s = -2$

$$\times \; (-2)^2 \cdot 3 = 12$$

$$\checkmark \; 3^2 \cdot (-2) = -18$$

5. Watch for the trap: swapping the values.
6. The square is on r, and r is three: −18, not 12.

Picture 3

Evaluate $(r-s)^2 + (r+s)^2$ when $r = 3$ and $s = -2$.

$$[3-(-2)]^2 + [3+(-2)]^2 \quad \text{values in brackets}$$

$$= \; 5^2 + 1^2 \quad \text{brackets first}$$

$$= \; \boxed{26}$$

7. Now evaluate (r − s)² + (r + s)², with the same values.
8. In brackets: three minus negative two, and three plus negative two.
9. Three minus negative two is five, and three plus negative two is one.
10. Twenty-five plus one is 26.

Picture 4

Trap $r - s, \quad s = -2$

$$\times \; 3 - 2 = 1$$

$$\checkmark \; 3 - (-2) = 5$$

11. Watch for the trap: leaving out the brackets loses the minus sign.
12. Keep negative two in brackets: three minus negative two is 5.