B·E·D·M·A·S

Given the expression $2 + (3 + 4)^2 - 5 \times (8 - 7) - 22 \div 2$

Brackets

Start with any operations inside of brackets.

$2 + (\mathbf{3 + 4})^2 - 5 \times (\mathbf{8 - 7}) - 22 \div 2$
$= 2 + \mathbf{7}^2 - 5 \times \mathbf{1} - 22 \div 2$

Exponents

Then simplify the terms with exponents.

$2 + \mathbf{7^2} - 5 \times 1 - 22 \div 2$
$= 2 + \mathbf{49} - 5 \times 1 - 22 \div 2$

Division

$2 + 49 - \mathbf{5 \times 1} - \mathbf{22 \div 2}$
$= 2 + 49 - \mathbf{5} - \mathbf{11}$

Multiplication

Next do division and multiplication in the order they appear in the question.

Addition

$\mathbf{2 + 49} - 5 - 11$
$= \mathbf{51 - 5} - 11$
$= \mathbf{46 - 11}$
$= 35$

Subtraction

Finally do addition and subtraction in the order they appear in the question.