Key answer

المدرسة الوطنية الأرثوذكسية الشميساني

The National Orthodox School Shmaisani

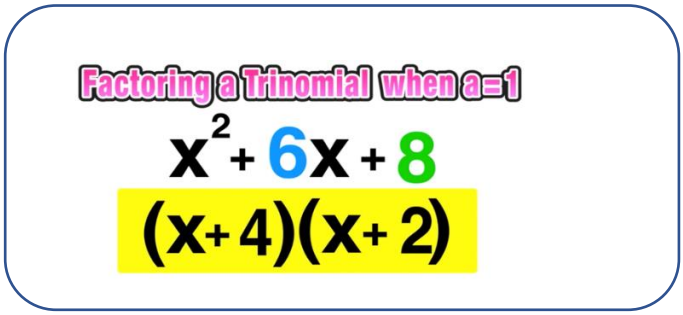
Worksheet (4) | Lower Secondary Stage (6-8)

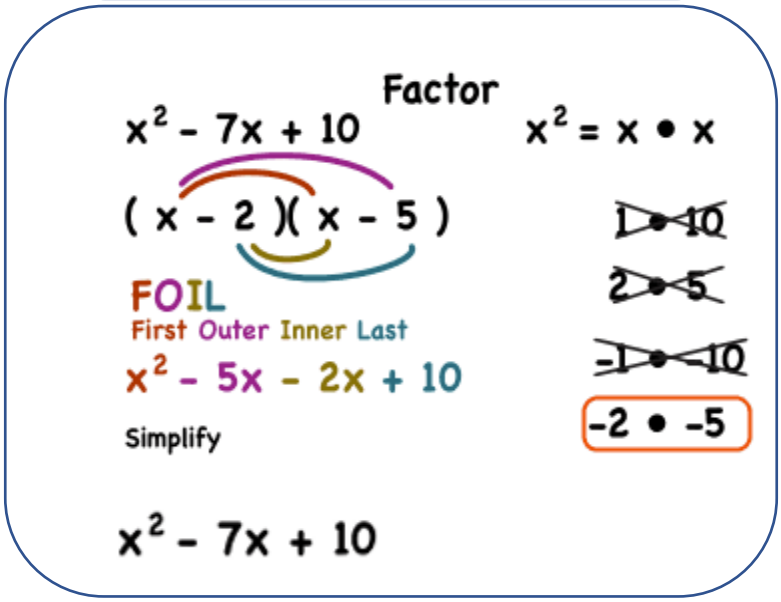
1st Semester | 2023-2024

Name: ..... **Subject:** math

Date: / / **Class:** Grade 8

Subject: Factoring Trinomials **Date :**





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Exercise : Factorise each of the following expressions completely:

1. $x^2 + 2x - 24$

Subtract, Product

$(x+6)(x-4)$

1×24, 2×12, 3×8, $4\times6 \rightarrow 6-4=2$

2. $y^2 + 3y - 10$

Subtract, Product

$(y-2)(y+5)$

3. $x^2 + 29x + 100$

Sum, Product

$(x+4)(x+25)$

Product: 1×100, 2×50, $3\times$, 4×25, 5×20, 10×10, stop

4. $w^2 - 6w + 8$

Sum, Product

$(w-2)(w-4)$

Product (8): 1×8, 2×4, $3\times$ → Sum (6)

5. $-10q + q^2 + 21$

$q^2 - 10q + 21$

$(w-3)(w-7)$

6. $y^2 + 20y + 100$

$(y+10)(y+10)$

7. $a^2 + 5a + 6$

$(a+2)(a+3)$

8. $w^2 - 9w - 10$

Subtract, Product

$(w-10)(w+1)$

9. $x^2 + x - 30$

$(x-5)(x+6)$

10. $13y + 30 + y^2$

$y^2 + 13y + 30$

Sum, Product

$(y+3)(y+13)$

11. $w^2 + 11w + 18$

Sum, Product

$(w+9)(w+2)$

12. $t^2 - t - 90$

1×90, 2×45, 3×30, 5×18, 6×15, 9×10

$(t+9)(t-10)$

13 $f^2 + 22f + 21$ $(f + 21)(f + 1)$	14 $h^2 - h - 72$ $(h + 8)(h - 9)$	15 $m^2 - 18m + 81$ $(m - 9)(m - 9)$
16 $x^2 + x - 72$ $(x + 9)(x - 8)$	17 $x^2 - 8x - 9$ $(x + 1)(x - 9)$	18 $x^2 + 2x - 48$ $(x - 6)(x + 8)$

***Example* (1):**

$x^2 + 7x + 12 =$

$(x+3)(x+4)$

when c +ve number

(+)(+)

(−)(−)

***Example* (2):**

$x^2 - 10x + 16 =$

$(x-2)(x-8)$

***Example* (3):**

$x^2 + x - 20 =$

$(x-4)(x+5)$

when c -ve number

(+)(−)

Wisam Al – mashni