

Opgave 120

Reducer udtrykkene mest muligt:

1)

$$\begin{aligned} z &= 4(a + 5b) + 7(3a + b) \Leftrightarrow \\ z &= 4a + 20b + 21a + 7b \Leftrightarrow \\ z &= \underline{25a + 27b} \quad \checkmark \end{aligned}$$

Du kan ogsaa skrive:  
 $z = \dots = \dots =$   
saa slipper du for  $\Leftrightarrow$

2)

$$\begin{aligned} x &= 3(7a + b) + 8(a + 3b) \Leftrightarrow \\ x &= 21a + 3b + 8a + 24b \Leftrightarrow \\ x &= \underline{29a + 27b} \quad \checkmark \end{aligned}$$

3)

$$\begin{aligned} y &= a(a - b) + b(a + b) \Leftrightarrow \\ y &= a^2 - ab + ab + b^2 \Leftrightarrow \\ y &= \underline{a^2 + b^2} \quad \checkmark \end{aligned}$$

4)

$$\begin{aligned} p &= x(x - 2y) + 2y(x + 2y) \Leftrightarrow \\ p &= x^2 - 2xy + 2yx + 4y^2 \Leftrightarrow \\ p &= \underline{x^2 + 4y^2} \quad \checkmark \end{aligned}$$

### Opgave 123

Sæt mest muligt uden for parentes:

1)

$$\begin{aligned} 2a^2 - 4a &\Leftrightarrow = \\ a(2a - 4) &\Leftrightarrow = \\ \underline{2a(a - 2)} & \end{aligned}$$

Her skal du bruge =

V

2)

$$\begin{aligned} 4y^2 - 5y &\Leftrightarrow = \\ \underline{y(4y - 5)} & \end{aligned}$$

V

3)

$$\begin{aligned} -10a + 15b &\Leftrightarrow = \\ \underline{-5(2a - 3b)} & \end{aligned}$$

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4)

$$\begin{aligned} 2ab - 6a^2b &\Leftrightarrow = \\ \underline{2a(-3a + 1)b} &= 2ab(1 - 3a) \end{aligned}$$

5)

$$\begin{aligned} 3x^2b - 6abx &\Leftrightarrow = \\ 3x(xb - 2ab) &\Leftrightarrow = \\ \underline{3bx(x - 2a)} & \end{aligned}$$

V

6)

$$\begin{aligned} 4ab + (-2)ab^2 &\Leftrightarrow = \\ \underline{-2a(b - 2)b} &= -2ab(b - 2) \end{aligned}$$

eller:  $2ab(2 - b)$

Opgave 127

Gang følgende parenteser ud:

1)

$$\begin{aligned} (x+y)(a+2y) &\Leftrightarrow = \\ \underline{ax + ay + 2xy + 2y^2} \end{aligned}$$

V

2)

$$\begin{aligned} (b-a)^2 &\Leftrightarrow = \\ (b-a)(b-a) &\Leftrightarrow = \\ b^2 - ba - ab + a^2 &\Leftrightarrow = \\ \underline{a^2 - 2ab + b^2} \end{aligned}$$

(V)  
Brug kv. saetn.

3)

$$\begin{aligned} (-4x+y)(4x+y) &\Leftrightarrow = \\ -16x^2 - 4xy + 4xy + y^2 &\Leftrightarrow = \\ \underline{-16x^2 + y^2} \end{aligned}$$

(V)  
Brug kv. saetn.

4)

$$\begin{aligned} -(a+x)(x+y) &\Leftrightarrow = \\ -(ax + ay + x^2 + xy) &\Leftrightarrow = \\ \underline{-ax - ay - xy - x^2} \end{aligned}$$

V

5)

$$\begin{aligned} (3a+2b)(3a-2b) &\Leftrightarrow = \\ 9a^2 - 6ab + 6ab - 4b^2 &\Leftrightarrow = \\ \underline{9a^2 - 4b^2} \end{aligned}$$

(V)  
Brug kv. saetn.

6)

$$\begin{aligned} (5-4y+2x)(5+3y) &\Leftrightarrow = \\ 5(5-4y+2x) + 3y(5-4y+2x) &\Leftrightarrow = \\ 25 - 20y + 10x + 15y - 12y^2 + 6xy &\Leftrightarrow = \\ \underline{25 + 10x + 6xy - 5y - 12y^2} \end{aligned}$$

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