Svör

Nokkur dæmi til að æfa sig fyrir prófið

Einfaldaðu eins og unnt er.

1) $2x^2 - 2x - 54 - 4x^2 - 7x + 7$

$2x^2 - 4x^2 - 2x - 7x - 54 + 7$

$-2x^2 - 9x - 47$

Svar: $-2x^2 - 9x - 47$

2) $4a - (b - (a - 2(2a - b)))$

$4a - (b - (a - 4a + 2b))$

$4a - (b - a + 4a - 2b)$

$4a - b + a - 4a + 2b$

$4a + a - 4a + 2b - b$

$a + b$

Svar: $a + b$

3) $4(3-x)-2(3x+2y)^2$

$12-4x-2(3x+2y)(3x+2y)$

$12-4x-2(9x^2+6xy+6xy+4y^2)$

$12-4x-18x^2-6xy-6xy-4y^2$

$-18x^2-4y^2-6xy-6xy-4x+12$

$-18x^2-4y^2-12xy-4x+12$

Svar: $-18x^2-4y^2-12xy-4x+12$

Fullþáttaðu margliðurnar

4)

$x^2-7x+12$

$-1\cdot-12=12$ | $-1-12=-13$

$-2\cdot-6=12$ | $-2-6=-8$

$-3\cdot-4=12$ | $-3-4=-7$

$(x-3)(x-4)$

Svar: $(x-3)(x-4)$

$\sqrt{49}=7$

5) x^2-49

$(x+7)(x-7)$

Svar: $(x+7)(x-7)$

Fullþáttaðu og fullstyttu

6) $\dfrac{x^2+x}{x^2-5x-6}$ → $x(x+1)$ → $(x+1)(x-6)$

$\dfrac{x}{x-6}$

Svar: $\dfrac{x}{x-6}$

Einfaldaðu eftirfarandi algebrubrot (fullstyttu svarið)

7) $\dfrac{(x+2)3}{(x+2)x+3} + \dfrac{5(x+3)}{(x+2)(x+3)}$ → $\dfrac{8x+21}{(x+2)(x+3)}$

$\dfrac{3(x+2)}{(x+2)(x+3)} + \dfrac{5(x+3)}{(x+2)(x+3)}$

$\dfrac{3(x+2)+5(x+3)}{(x+2)(x+3)} =$

$\dfrac{3x+6+5x+15}{(x+2)(x+3)}$

Svar: $\dfrac{8x+21}{(x+2)(x+3)}$

Leystu jöfnunar

8)

$$\frac{2-x}{3x} = \frac{2}{x} - 4$$

$$\frac{(2-x)}{3x} = \frac{2\cdot 3}{x\cdot 3} - \frac{4}{1}\cdot\frac{3x}{3x}$$

$$\frac{2-x}{3x} = \frac{6}{3x} - \frac{12x}{3x}$$

$$2 - x = 6 - 12x$$
$$+12x \qquad +12x$$

$$2 - x + 12x = 6$$
$$-2 \qquad -2$$

$$-x + 12x = 6 - 2$$

$$\frac{11x}{11} = \frac{4}{11}$$

$$x = \frac{4}{11}$$

Svar: $x = \frac{4}{11}$

9)

$$\frac{(y+7)}{3y} = \frac{1}{2}$$

$$2(y+7) = 1\cdot 3y$$

$$2y + 14 = 3y$$
$$-14 \qquad -14$$

$$2y = 3y - 14$$
$$-3y \qquad -3y$$

$$y = 14$$

$$2y - 3y = -14$$

$$\frac{-1y}{-1} = \frac{-14}{-1}$$

Svar: $y = 14$

10) Leystu jöfnuhneppið

(1) $8x + 3y = 17$) 2

(2) $6x + 2y = 11$) 3

(1) $2(8x + 3y = 17)$

$16x + 6y = 34$

(2) $3(6x + 2y = 11)$

$18x + 6y = 33$

(1) $16x + 6y = 34$

$-(18x + 6y = 33)$

$16x + 6y = 34$

$-18x - 6y = -33$

$-2x = 1$

$x = -\frac{1}{2}$

$8x + 3y = 11$

$8 \cdot (-\frac{1}{2}) + 3y = 11$

$-4 + 3y = 11$

$+4 \qquad +4$

$3y = 11 + 4$

$\frac{3y}{3} = \frac{15}{3}$

$y = 5$

x = $-\frac{1}{2}$

y = 5