

Nafn: LAUSN

1. (6%) Frumpáttaðu 32760.

$$32760 - 16380 - 8190 - 4095 - 1365 - 455 - 91 - 13$$

$$\begin{array}{cccccccc} & | & & | & & | & & | & & | & & | & & | \\ & 2 & & 2 & & 2 & & 3 & & 3 & & 5 & & 7 & & 13 \end{array}$$

2. (7%) Hver er stærsti samdeilir talnanna 270 og 420?

$$270 - 135 - 45 - 15 - 5 - 1 \quad \left\{ \quad 420 - 210 - 105 - 35 - 7 - 1 \quad \right\} \quad \text{SAMEIGINLEGAR TÖLUR:}$$

$$\begin{array}{cccccc} \underline{2} & \underline{3} & \underline{3} & \underline{3} & \underline{5} & \underline{1} \\ \underline{2} & \underline{2} & \underline{3} & \underline{5} & \underline{7} & \underline{1} \end{array} \quad 2 \cdot 3 \cdot 5 = \underline{\underline{30}}$$

3. (7%) Hver er minnsti samnefnari (samfeldi) talnanna 270 og 420?

$$2 \cdot 3 \cdot 5 \cdot 2 \cdot 3 \cdot 3 \cdot 7 = \underline{\underline{3780}} \quad (\text{SAMEIGINLEGAR TÖLUR \& STAKAR TÖLUR})$$

4. (10%) Reiknaðu án vasareiknis

$$a) \frac{2^6}{15 \cdot 6} + \frac{3^5}{18 \cdot 5} = \frac{12 + 15}{90} = \frac{27}{90}$$

$$\begin{array}{cc} 15 - 5 - 1 & 18 - 6 - 2 - 1 \\ \underline{3} & \underline{3} & \underline{3} & \underline{2} \\ & \underline{5} & & \underline{2} \end{array} \quad 2 \cdot 3 \cdot 3 \cdot 5 = 90$$

$$b) \frac{2}{15} \cdot \frac{3}{18} = \frac{1}{5} \cdot \frac{1}{9} = \frac{1}{45}$$

5. (70%) Þáttaðu eftirtaldar liðastærðir:

$$a) xy + x \quad \underline{\underline{x(y+1)}}$$

$$b) x^2y - xz \quad \underline{\underline{x(xy-z)}}$$

$$c) 3x^2 - 6x \quad \underline{\underline{3x(x-2)}}$$

$$d) x^2 + 8x - 9 \quad \underline{\underline{(x+9)(x-1)}}$$

$$e) x^2 + 3x - 10 \quad \underline{\underline{(x+5)(x-2)}}$$

$$f) x^2 + 9x + 20 \quad \underline{\underline{(x+5)(x+4)}}$$

$$g) x^2 - 8x + 16 \quad \underline{\underline{(x-4)(x-4) = (x-4)^2}}$$

$$h) x^2 - 17x + 16 \quad \underline{\underline{(x-16)(x-1)}}$$

$$i) x^2 + 6x - 16 \quad \underline{\underline{(x+8)(x-2)}}$$

$$j) x^2 - 25 \quad \underline{\underline{(x+5)(x-5)}}$$

$$k) 4x^2 - 100 \quad \underline{\underline{4(x^2 - 25) = 4(x+5)(x-5)}}$$

$$l) 100y^2 - 1 \quad \underline{\underline{(10y+1)(10y-1)}}$$

$$m) 3x^2 - 108 \quad \underline{\underline{3(x^2 - 36) = 3(x+6)(x-6)}}$$

$$n) 8x^9 + 1 \quad \underline{\underline{(2x^3)^3 + 1^3 = (2x^3+1)(4x^6-2x^3+1)}}$$