

Name: SOLUTIONS Skills Check – self assessment

Date: _____

1. Expand and simplify

a) $3x(x-4) - x(x+5) - 2x(x-1)$ b) $2(x+3)(x+5)$

[3,2] $= 3x^2 - 12x - x^2 - 5x - 2x^2 + 2x$ $= 2(x^2 + 8x + 15)$
 $= \underline{\underline{-15x}}$ $= \underline{\underline{2x^2 + 16x + 30}}$

c) $5(3t-1)^2 - 4(4t-5)(4t+5)$

[5] $= 5(9t^2 - 6t + 1) - 4(16t^2 - 25)$
 $= 45t^2 - 30t + 5 - 64t^2 + 100$
 $= \underline{\underline{-19t^2 - 30t + 105}}$

2. Multiply $(2xy)(-3x^2y^3)(-3x^2)$.

[1] $= -6x^3y^4(-3x^2)$
 $= \underline{\underline{18x^5y^4}}$

3. Divide $\frac{-75s^2t^5 - 25s^2t^2}{5st}$

[2] $= \underline{\underline{-15st^4 - 5st}}$ or $\underline{\underline{-5st(3t^3 - 1)}}$

4. Factor the following.

a) $15a^3b^6c^2 - 9a^2bc + 3abc$

[1,3] $= \underline{\underline{3abc(5a^2b^5c - 3a + 1)}}$

b) $3x^2 - 30x + 27$

 $= 3(x^2 - 10x + 9)$
 $= \underline{\underline{3(x-9)(x-1)}}$

c) $4t(m+7) + (m+7)$

[1,2] $= \underline{\underline{(m+7)(4t+1)}}$

d) $x^2 + x - xy - y$

 $= x(x+1) - y(x+1)$
 $= \underline{\underline{(x+1)(x-y)}}$

e) $(x+a)^2 + 6(x+a) + 8$

[4] $= ((x+a) + 4)((x+a) + 2)$
 $= \underline{\underline{(x+a+4)(x+a+2)}}$