[factoring]

1. Expand and simplify
   a. $3x(5 - 2x) - 3(2x - 4) + 7x^2$
   b. $3(2x - 1)^2 - (2x + 3)(x - 2)$
   c. $(2x^2 - x + 3)(x^2 - 2)$

2. Simplify and state the restrictions
   a. $\frac{-32x^3y^4z^2}{4x^4yz^3}$
   b. $\frac{x^2 - 2x - 15}{x^2 - 5x}$

3. Factor the following fully
   a. $21x^2 - 3x$
   b. $x^2 - 5x - 84$
   c. $4x^2 + 20x - 24$
   d. $81x^2 - \frac{49}{25}y^2$
   e. $ac + bc - ad - bd$
   f. $5 - 80x^4$
   g. $2x(3a - b) - 3y(3a - b)$
   h. $8x^2 + 14x - 15$
   i. $5a^2b - 5ab + 3a - 3a^2$
   j. $x^2 - 2xy + y^2 + x - y$

4. Simplify
   a. $\frac{4x^2 - 10}{3 + 3y} \times \frac{2x^2 - 18y^2}{6x^2 - 15}$
   b. $\frac{8ab}{a^2 - 4b^2} \div \frac{4b^2}{3(a - 2b)^2}$
   c. $\frac{2x^2 + 7x + 3}{3x^2 + 13x + 12} \times \frac{3x^2 - 2x - 8}{4x^2 + 4x + 1}$
   d. $\frac{5x}{3y} - \frac{8x - 24}{7x} + 1$

worksheets