TEST YOUR SKILLS

1 Simplify the complex fraction:

$$\frac{\dfrac{1}{x+a}+\dfrac{1}{x-a}}{\dfrac{1}{x+a}-\dfrac{1}{x-a}}.$$

(USA *Temple College, Texas*, Practice Test, 2005)

$\left[-\dfrac{x}{a}\right]$

2 Subtract and write the answer in lowest terms:

$$\frac{1}{x^2-1}-\frac{1}{x^2+3x+2}.$$

(CAN *John Abbott College*, *Final Exam*, 2000)

$\left[\dfrac{3}{x^3+2x^3-x-2}\right]$

3 Factor each of the following polynomials. If the polynomial is prime, say so.
a) $2a^2-16a+32$;
b) $9y^2+4$.

(USA *Tacoma Community College, Review for Test*, 2002)

[a) $2(a-4)^2$; b) prime]

4 Simplify by factoring and cancelling common factors:

$$\frac{2x^2-5x-12}{x^2+x-20}:\frac{4x^2-9}{x^2+4x-5}.$$

(CAN *John Abbott College*, *Final Exam*, 2000)

$\left[\dfrac{x-1}{2x-3}\right]$

5 Factor as much as possible:
a) $22x^3-19x^2+13$;
b) $3x^3-3x$;
c) $7x^2+8x+1$;
d) $xy-4x+5y-20$.

(CAN *John Abbott College*, *Final Exam*, 1999)

[a) prime; b) $3x(x+1)(x-1)$; c) $7(x+1)(x-1)$; d) $(y-4)(y+5)$]

GLOSSARY

to cancel: cancellare	**lowest terms**: minimi termini	**to simplify**: semplificare
to factor: fattorizzare, scomporre	**prime**: primo	**to substract**: sottrarre