



TEST YOUR SKILLS

1 TEST Solve the following inequality:

$$\frac{(x^2 - x - 6)}{x - 5} \geq 0.$$

- A** $]5; +\infty[$
 B $[-2; 3] \cup]5; +\infty[$
 C $[-2; 3]$
 D $] -\infty; -2] \cup]3; 5[$
 E $[-2; 3] \cup]5; +\infty[$

(USA North Carolina State High School Mathematics Contest, 2003)

2 Solve the following inequality:

$$\frac{(x+1)(x-\sqrt{2})}{(x+5)^2} \geq 0.$$

Express your answer in interval notation or graph your solution on the number line.

(USA Southern Illinois University Carbondale, Final Exam, 2001)

$$[-\infty; -5[\cup]-5; -1] \cup [\sqrt{2}; +\infty[$$

3 Solve $\frac{5x+2}{x+3} \leq 0$.

Write the answer in interval notation.

(USA North Carolina State High School Mathematics Contest, 2002)

$$\left[-3; -\frac{2}{5} \right]$$

4 TEST How many numbers from the set

$$\{-5, -4, -3, -2, -1, 0, 1, 2, 3\}$$

satisfy the inequality $-3x^2 < -14$?

- A** 1 **B** 2 **C** 3 **D** 4 **E** 5

(CAN Canadian Mathematics Competition, Gauss Contest, 2003)

5 TEST Solve for y : $\frac{y}{9} + 4 < \frac{y-5}{5} + 1$.

- A** $y < 45$
 B $y > 45$
 C $y < -1$
 D $y > -1$
 E $y < 9$

(CAN Canadian Open Mathematics Challenge, 1996)

GLOSSARY

to express: esprimere

following: seguente

inequality:
disequazione

number line: retta
numerica

to satisfy: soddisfare