

TEST YOUR SKILLS

1 Find the greatest common divisor and the least common multiple of the following group of monomials:
 ab^2c^3 ; $2a^3bc$; $3abc^4$; $a^2b^2c^2d$. [abc ; $6a^3b^2c^4d$]

2 The difference between a number and 4 is multiplied by the number, and then 5 times the number is added to the result. Express the final result as a polynomial, denoting the number with x .
 [$x(x - 4) + 5x$]

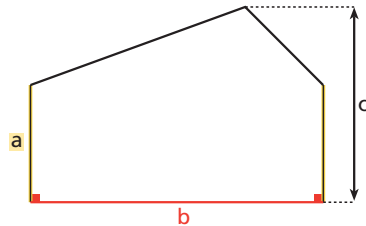
3 Simplify and write exponents as positive:
 $(2xy^2z^3)^2 (3x^3y^2z)^{-2}$.
 (USA Temple College, Texas, Practice Test, 2002) [$\frac{4z^4}{9x^4}$]

4 Answer the questions below for the polynomial $3x^3 - x^4 - 6x^2 - 4 + 2x$.
 a) Is this polynomial a monomial, binomial, trinomial, or other?
 b) What is the degree of this polynomial?
 c) What is the leading coefficient of this polynomial?
 (USA Tacoma Community College, Review for Test, 2002)

5 Subtract or multiply as indicated.
 a) $(3x^4 - x^3 + x - 4) - (x^4 + 7x^3 - 3x - 5)$;
 b) $(3ab - 2b^2 + b)(a - 5b)$.
 (USA Tacoma Community College, Review for Test, 2002)
 [a] $2x^4 - 8x^3 + 4x + 1$;
 b) $3a^2b - 17ab^2 + 10b^3 + ab - 5b^2$]

6 Is the following statement true or false?
 «A monomial must have exactly one term, a binomial must have exactly two terms, a trinomial must have exactly three terms, and a polynomial must have four or more terms.»

7 TEST What is the area of the pentagon shown?



- A** $\frac{1}{2}a(b - c)$ **D** $\frac{1}{2}b(c - a)$
B $\frac{1}{2}b(a + c)$ **E** $\frac{1}{2}c(a + b)$
C $\frac{1}{2}a(b + c)$

(UK Intermediate Mathematical Challenge, 2003)
 Le gare Intermediate Mathematical Challenge sono rivolte a studenti britannici di 15 anni.

8 TEST The perimeter of a rectangle is 100 and its diagonal is of a length x . What is the area of this rectangle?
 (Hint: let l and w be the sides of the rectangle; write the area and x in terms of l and w .)

- A** $625 - x^2$
B $625 - \frac{x^2}{2}$
C $1250 - x^2$
D $1250 - \frac{x^2}{2}$
E $2500 - \frac{x^2}{2}$

(USA American Mathematics Contest 10, 2002)

GLOSSARY

to add: aggiungere, aggiungere
between: fra
binomial: binomio
common: comune
degree: grado
exponent: esponente
to find-found-found: trovare

following: seguente
greatest: massimo
hint: suggerimento
leading coefficient: coefficiente principale
least: minimo
monomial: monomio
perimeter: perimetro

polynomial: polinomio
rectangle: rettangolo
side: lato
to simplify: semplificare
term: termine
trinomial: trinomio