A2Q3

Given a polynomial f in one or more variables with rational or decimal coefficients, the height of f is the magnitude of the largest coefficient as shown below. Write a Maple procedure `height (f::polynom)` that outputs the height of the polynomial. Use the `coeffs (f)` command to get the coefficients of the polynomial.

```
> restart:
> height := proc(f::polynom)
      local C,c,H;
      C := {coeffs(f)};
      H := {};
      for c in C do
          H := H union {abs(c)};
      od;
      return H[nops(H)];
      end;
```

$$height := \mathbf{proc}(f::polynom) \quad \textbf{(1)}$$

```
    local C, c, H;
    C := {coeffs(f)};
    H := {};
    for c in C do H := H union {abs(c)} end do;
    return H[nops(H)]
end proc
```

```
> f := 3*x^3-5*x+4;
```

$$f := 3x^3 - 5x + 4 \quad \textbf{(2)}$$

```
> coeffs(f);
```

$$3, -5, 4 \quad \textbf{(3)}$$

```
> height(f);
```

$$5 \quad \textbf{(4)}$$

```
> f := 8*x^3+22*x-33*x^2-19;
```

$$f := 8x^3 - 33x^2 + 22x - 19 \quad \textbf{(5)}$$

```
> height(f);z
```

$$33$$
$$z \quad \textbf{(6)}$$

```
> height(0);
```

$$0 \quad \textbf{(7)}$$