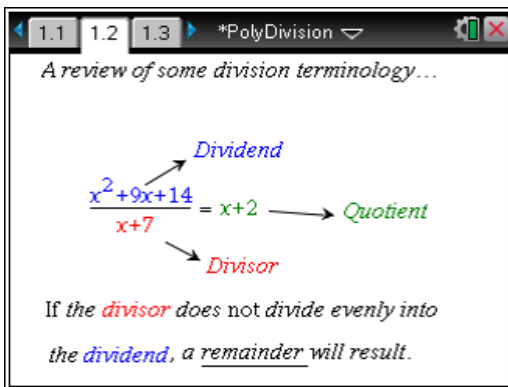




**Problem 1 – Introduction**

1. Identify the term that is associated with each of the parts of the division problem shown below.



- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

2. When  $x^4 + 2x^3 - 13x^2 - 14x + 24$  is divided by  $x - 1$ , ...
  - a. the quotient is:
  - b. the remainder is:
3. Factor  $x^4 + 2x^3 - 13x^2 - 14x + 24$ , then divide by  $x - 1$ . How do your results explain the remainder obtained in the last question?

**Problem 2 – Remainders**

4. When  $x^3 - 7x - 6$  is divided by  $x - 4$ , ...
  - a. the quotient is:
  - b. the remainder is:
5. What is the value of  $f(x) = x^3 - 7x - 6$  at  $x = 4$ ? In other words, what is the value of  $f(4)$ ?  
 $f(4) =$
6. 4 is a zero or root of the function  $f(x) = x^3 - 7x - 6$ .
 

agree                       disagree

# Polly, Want Some Division?

## Problem 3 – Retained Impressions

7. Divide  $6x^3 - 5x^2 + 4x - 17$  by  $x - 3$ .

a. The quotient is:

b. The remainder is:

8. Given  $f(x) = 6x^3 - 5x^2 + 4x - 17$ , what is the value of  $f(3)$ ?

$f(3) =$

9. 3 is a zero or root of the function  $f(x) = 6x^3 - 5x^2 + 4x - 17$ .

agree

disagree

10. Divide  $x^5 - 23x^3 + 6x^2 + 112x - 96$  by  $x + 4$ .

a. The quotient is:

b. The remainder is:

11. Given  $f(x) = x^5 - 23x^3 + 6x^2 + 112x - 96$ , what is the value of  $f(-4)$ ?

$f(-4) =$

12.  $-4$  is a zero or root of the function  $f(x) = x^5 - 23x^3 + 6x^2 + 112x - 96$ .

agree

disagree

13. Describe the effect on the quotient as observed on the graph when a divisor is a factor of a dividend.

