

Bell Work:

1. Divide by the method of your choice.

$$(3x^3 - 2x^2 - 15x - 14) \div (x + 2)$$

2. Multiply $(3d^2 - 5)(4n + 3)$.

For # 3 and 4, use $f(x) = x^4 + 3x^3 - 39x^2 - 187x - 182$.

3. What is $f(7)$?

4. What is $f(-5)$?

$$(x^4 + 3x^3 - 39x^2 - 187x - 182) \div (x - 7)$$

<u>7</u>	1	3	-39	-187	-182	$f(7) = 28$
		7	70	217	210	
	1	10	31	30	28	

$$(x^4 + 3x^3 - 39x^2 - 187x - 182) \div (x + 5)$$

<u>-5</u>	1	3	-39	-187	-182	$f(-5) = 28$
		-5	10	145	210	
	1	-2	-29	-42	28	

Remainder Theorem:

The remainder of a polynomial divided by a number is the value of that polynomial at that number.

$$f(x) = 6x^5 + 34x^4 + 12x^3 - 23x^2 + 35x - 64$$

$$f(-5) = 186$$

<u>-5</u>	6	34	12	-23	35	-64
		-30	-20	40	-85	250
	<hr/>					
	6	4	-8	17	-50	186

$$f(x) = 6x^5 + 34x^4 + 12x^3 - 23x^2 + 35x - 64$$

$$f(2) = 746$$

<u>2</u>	6	34	12	-23	35	-64
		12	92	208	370	810
	6	46	104	185	405	746

$$g(x) = 4x^6 - 58x^4 - 16x^3 + 5x^2 - 43x + 39$$

$$g(4) = 459$$

<u>4</u>	4	0	-58	-16	5	-43	39
		16	64	24	32	148	420
	4	16	6	8	37	105	459

Assignment:

Page 426 # 8 – 11, 25 – 29

Use synthetic substitution to evaluate the polynomial for the given value.

8. $P(x) = 2x^3 - 9x^2 + 27$ for $x = 2$

9. $P(x) = x^2 - x - 30$ for $x = -8$

10. $P(x) = 3x^3 + 5x^2 + 4x + 2$ for $x = \frac{1}{3}$

11. $P(x) = 3x^5 + 4x^2 + x + 6$ for $x = -1$

Use synthetic substitution to evaluate the polynomial for the given value.

25. $P(x) = 2x^2 - 5x - 3$ for $x = 4$

26. $P(x) = 4x^3 - 5x^2 + 3$ for $x = -1$

27. $P(x) = 3x^3 - 5x^2 - x + 2$ for $x = -\frac{1}{3}$

28. $P(x) = 25x^2 - 16$ for $x = \frac{4}{5}$