

Warm-up: 1.6.2022

- 1) Get out your graphing calculator.
- 2) Get out your composition notebook and, beginning on the first page, number pages from 1-20 using front and back.
- 3) Copy the following problems on pg. 7 and factor completely: a) $x^2 - 16$ b) $x^2 - x - 6$

c) $2x^2 - 7x - 4$ d) $3x^3 + 81$ e) $3x^3 - 15x^2 + 2x - 10$

pg. 11 Unit Circle pg. 12 Trig Graphs
pg. 9 Rules pg. 8 Rational Func.
pg. 10 Characteristics

$$\begin{aligned} e) & (3x^3 - 15x^2) + (2x - 10) \\ & 3x^2(x - 5) + 2(x - 5) \\ & (x - 5)(3x^2 + 2) \end{aligned}$$

$$d) 3x^3 + 81$$

$$3(x^3 + 27) \text{ Cubes}$$

$$3(x+3)(x^2-3x+9)$$

$$4. \ 6x^2 - \underline{5x} - 6$$

$$(6x^2 - 9x) + (4x - 6) \quad \begin{array}{r|l} \text{M} & \text{A} \\ \hline -36 & -5 \\ -9 \cdot 4 & -9 + 4 \end{array}$$

$$3x(x-3) + 2(x-3)$$

$$(3x+2)(x-3)$$

$$8. \quad 9x^2 + 52x - 77$$
$$(9x^2 + 63x) - 11x - 77$$

M	A
63	52
63	-11

(Note: The numbers 63 and -11 in the table are circled in blue in the original image.)

$$\begin{array}{l} \text{c) } 2x^2 - 7x - 4 \\ (2x^2 - 8x)(+x - 4) \\ 2x(x - 4) + 1(x - 4) \\ (x - 4)(2x + 1) \end{array} \quad \begin{array}{r|l} M & A \\ -8 & -7 \\ -8 & +1 \end{array}$$

$$12. \quad 35cb^2 - 14cb - 21c$$

$$7c(5b^2 - 2b - 3) \quad \begin{array}{r|l} M & A \\ \hline -15 & -2 \end{array}$$

$$7c((5b^2 - 5b) + (3b - 3)) \quad \begin{array}{r|l} -15 & -2 \\ \hline -5 \cdot 3 & \end{array}$$

$$22. (2x^2 + 3y)(-xy - 6x)$$
$$(2x^2 - 6x)(+3y - xy)$$

$$21. x^8 - 81$$

$$\rightarrow (x^4 - 9)(x^4 + 9)$$

$$(x^2 - 3)(x^2 + 3)(x^4 + 9)$$

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$$16. 2c^3 + 16$$

$$2(c^3 + 8)$$

$$2(c+2)(c^2-2c+4)$$

$$\begin{aligned} \text{b) } & |x^2 - x - 6 \\ & = (x-3)(x+2) \end{aligned}$$

M	A
-6	-1
-3	+2

~~X~~

$$\begin{aligned} a) & x^2 - 16 \text{ DOTS} \\ & = (x+4)(x-4) \end{aligned}$$

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c) d) e)