ne: Key!!

RACTICE QUESTIONS FOR THE QUIZ FRIDAY!!! POTENTIAL QUESTIONS!! Key to follow

1. Which of the following terms could *not* be part of a polynomial expression?

(1) $7x^5$ (3) $-3x^2$

(2) 8 ✓(4) $\frac{6}{x^3}$ b/c $\frac{6}{x^3} = 6x^{-3}$, cannot have neg. exp.

2. Which of the following trinomials is equivalent to the square of the binomial $x-3$?

$(x-3)^2 = (x-3)(x-3)$
$= x^2 - 6x + 9$

(1) $2x+6$ (3) x^2-6x-9

(2) x^2+9 ✓(4) x^2-6x+9

3. If $f(x)=5x^2-2x+7$ and $g(x)=-2x^2+6x+3$ then $f(x)-g(x)=$

$5x^2-2x+7-(-2x^2+6x+3)$
$5x^2-2x+7+2x^2-6x-3$
$7x^2-8x+4$

✓(1) $7x^2-8x+4$ (3) $3x^2+4x+10$

(2) $3x^2-8x+4$ (4) $7x^2+4x+10$

4. Which of the following is the value of $2x^3+5x+9$ when $x=10$?

$2(10)^3+5(10)+9$

(1) 259 (3) 160

(2) 1,290 ✓(4) 2,059

5. Which of the following is the greatest common factor of the terms $18xy^2$, $30x^5y^4$, and $12x^3y^3$?

gcf of 18, 30, 12 is 6
then xy^2 Take the greatest common monomial.
look for the least exponent

(1) $30x^4y^4$ (3) $5xy$

✓(2) $6xy^2$ (4) $12x^2y^2$

6. Which of the represents a correct factored form of the trinomial $2x^2-x-28$?

$F \times L = 2(28)$
$= 56$
$7 \cdot 8$ $-8x+7x=-1x$ ✓

(1) $(2x-7)(x+4)$ (3) $(2x-4)(x+7)$

(2) $(2x+4)(x-7)$ ✓(4) $(2x+7)(x-4)$

$2x^2-8x+7x-28$
$2x(x-4)+7(x-4)$
$(x-4)(2x+7)$

7. Which of the following is *not* a correctly factored form of the binomial $24x^2 - 40x$?

T (1) $8(3x^2 - 5x)$

F (3) $4x(6x - 10x)$

$24x^2 - 40x^2$

(2) $8x(3x - 5)$

(4) $4(6x^2 - 10x)$

use distribution

or

Factor the given

8. If the product of $5x+1$ and $2x-3$ was placed in $ax^2 + bx + c$ form, what would the value of $a+b+c$ equal? Show how you arrived at your answer.

$(5x+1)(2x-3) = 10x^2 - 15x + 2x - 3$

$= 10x^2 - 13x - 3$

$a = 10 \quad b = -13 \quad c = -3$

$10 + -13 + -3$

$\boxed{-6}$

9. Write the expression below in simplest form.

$$3x^2 + 8x - 1 - 2(x^2 + 5x + 3) + 8(7 - x - 4x^2)$$

Distribute, combine

$3x^2 + 8x - 1 - 2x^2 - 10x - 6 + 56 - 8x - 32x^2$

$-31x^2 - 10x + 49$

10. **Factor the following expression completely.**

$c^2 - 6c$

$c(c-6)$

$x^2 + 3x - 4$

$(x+4)(x-1)$

$v^2 - 10v + 24$

$(v-6)(v-4)$

Keep going

$x^4 - 17x^2 + 16$

$(x^2 - 16)(x^2 - 1)$

$\boxed{(x-4)(x+4)(x-1)(x+1)}$

See structure!!

$a^2 - b^2 = (a-b)(a+b)$

Difference of Squares = product of conjugate pairs

$2x^3 - 9x^2$

$x^2(2x - 9)$

$49 - 289r^2$

$(7 - 17r)(7 + 17r)$

Know your perfect Squares!!

Unit 8

Consider the function $f(x) = x^2 + 2x - 3$

x	y
-4	5
-3	0
-2	-3
-1	-4
0	-3
1	0
2	5

vertex

a. Provide a table and sketch the curve on the grid. What is the name of this? Parabola

b. Determine the turning point. $(-1, -4)$ Write as an ordered pair , and circle it in the table.

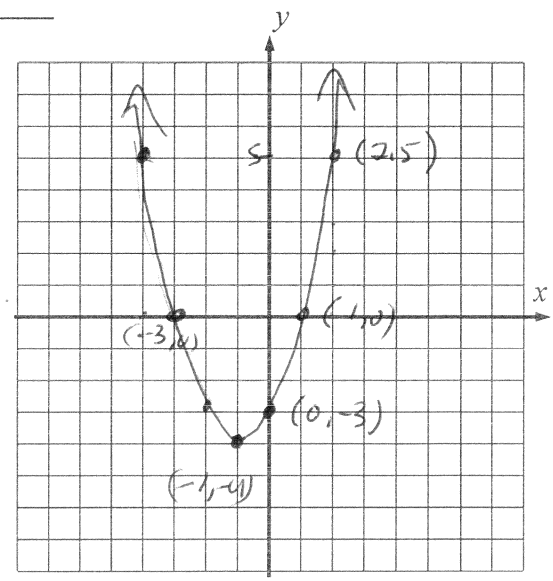
c. What is the max/min value of the function? -4 Hint: This is the OUTPUT

d. Over what interval is the function decreasing? $(-\infty, -1)$ Write as an inequality or interval notation

$x < -1$ or $\{x \mid x < -1\}$ or $(-\infty, -1)$

e. What are the coordinates of the x-intercepts? _____

$(-3, 0)$ and $(1, 0)$



f. Determine the solution(s) to

$$x^2 + 2x - 3 = 12$$

Explain how you solved the problem.

By the table:
look up where the output is 12.
we get $x = -5$ and $x = 3$

Hint : You can use the table, or the graph.

graphs: graph $f_1 = x^2 + 2x - 3$
graph $f_2 = 12$
and locate the point of intersection
There are 2 so, $x = 3$ and $x = -5$

g. In determining the solution(s) to $x^2 + 2x - 3 = 6$, why is it that the "table" technique will not work?

There is no "nice" integer input that gives 6 as an output

Find the solution(s) to the nearest tenth.

Use graphs to find

$x = 2.1622\overline{7} \rightarrow 2.2$

$x = -4.1622\overline{7} \rightarrow -4.2$

$\{-4.2, 2.2\}$