Precalculus Spiral Review TWO Due Friday

1. $f(x) = \frac{3}{2}x + b$

In the function above, b is a constant. If $f(6) = 7$, what is the value of $f(-2)$?

A) -5
B) -2
C) 1
D) 7

2. If $f(x) = -2x + 5$, what is $f(-3x)$ equal to?

A) $-6x - 5$
B) $6x + 5$
C) $6x - 5$
D) $6x^2 - 15x$

3. How many liters of a 25% saline solution must be added to 3 liters of a 10% saline solution to obtain a 15% saline solution?

4. . **SALES** The sales $S(x)$ in thousands of dollars that a store makes during one month can be approximated by $S(x) = 2x^3 - 2x^2 + 4x$, where x is the number of days after the first day of the month. How many days will it take the store to make $16,000?

5. Find the value of k so the quotient has a zero remainder

$$\frac{x^6 + kx^4 - 8x^3 + 173x^2 - 16x - 120}{x - 1}$$

6. Factor $6x^3 + 17x^2 - 104x + 60$ Given $(2x - 5)$ as a factor.

7. **0. MULTIPLE CHOICE** Which of the following equations represents the result of shifting the parent function $y = x^3$ up 4 units and right 5 units?

A $y + 4 = (x + 5)^3$
B $y - 4 = (x + 5)^3$
C $y + 4 = (x - 5)^3$
D $y - 4 = (x - 5)^3$

8. Over the domain $2 < x \leq 3$, which of the following functions contains the greatest values of y?

F $y = \frac{x+3}{x-2}$

G $y = \frac{x-5}{x+1}$

H $y = x^2 - 3$

J $y = 2x$

9. **Given $f(x) = 2x^2 - 5x + 3$ and $g(x) = 6x + 4$, find each function.**

$[f \circ g](x)$

10. **ERROR ANALYSIS** Colleen and Martin are modeling the data shown. Colleen thinks the model should be $f(x) = 5.754x^3 + 2.912x^2 - 7.516x + 0.349$. Martin thinks it should be $f(x) = 3.697x^2 + 11.734x - 2.476$. Is either of them correct? Explain your reasoning.

x	$f(x)$	x	$f(x)$
−2	−19	0.5	−2
−1	5	1	1.5
0	0.4	2	43