Review

used 2009-03

(1.) Determine the solution of the double inequality.
$-4 \le 2 - 3x \le 11$. Graph it, and write in ⓐ interval notation
  ⓑ as an absolute value

$$\left| x - centre \right| \begin{smallmatrix} \le \\ > \end{smallmatrix} radius$$

(2.) Solve $3x^2 + 1 > 25$.

(3.) Fill out a plus/minus table for
$f(x) = -5x(x^2 + 4)(7 - x)(x^2 - 10)$ and use it to
state in interval notation when $f(x) < 0$.

(4.) ⓐ Determine where the function
$f(x) = (3 - 0.75x)(2x + 12)$ has a negative rate of
change. (Easily seen from a sketch.)

ⓑ If $f(x)$ represents displacement at time x
find ~~speed~~ velocity at time $x = 1$ sec

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Find a Family

(5.) ⓐ degree 4, with two distinct double roots, one of them at -5

ⓑ

x	1	3	5	7	9	11
y	26	48	46	20	−30	−104

(6.) Charice is painting the lines for her own
basketball court. The free throw section will be
a rectangle with a semi-circle on top. The
length of the rectangle will be 2.25 metres
greater than the width. Using 3.14 for π, the
area of the court is 31.28 m². Determine the
dimensions of the free throw section. (A=πr² is
the area of a circle)
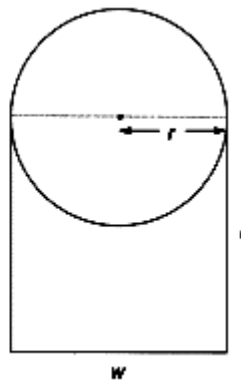
7. Find a value x on $f(x) = -x^4$ with tangent slope of 8.

8. Determine and graph when the function
$f(x) = 3x^3 + 4x^2 - 59x - 13$ is less than or equal to 7.
Show proper mathematical form in your solution.