Are there any Homework Questions you would like to see on the board?

Last day's work: 3.7 Families of Quadratic Functions
READ pp. 188-191
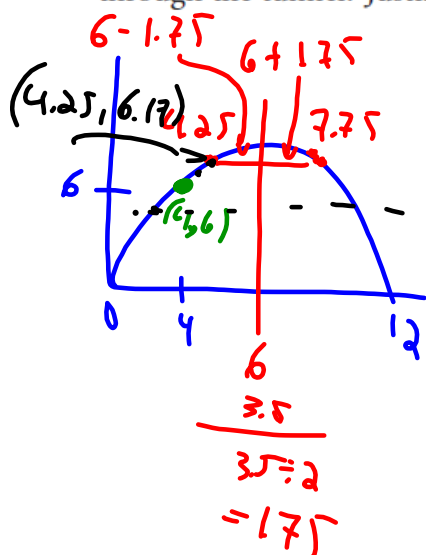p. 192 #1 – 3, 4ac, 5ac, 6, 8, 10

Today's work: Max/Min Problems Worksheet #2

#1-5, 8 [6, 7]

Once all the quizzes are submied,
you may work in groups.

p. 192 #10

10. A tunnel with a parabolic arch is 12 m wide. If the height of the arch 4 m
T from the left edge is 6 m, can a truck that is 5 m tall and 3.5 m wide pass
through the tunnel? Justify your decision.

$r = 0, S = 12$

$6 - 1.75$
$6 + 1.75$
$(4.25, 6.17)$ 4.25 7.75
6
6.17
0 4 12
6
3.5
$3.5 \div 2$
$= 1.75$

$y = a(x - r)(x - s)$

$= a(x - 0)(x - 12)$

$= ax(x - 12)$

$6 = a(4)(4 - 12)$

$6 = a(4)(-8)$

$6 = -32a$

$\frac{6}{-32} = a$

$a = -\frac{3}{16}$

$\therefore y = -\frac{3}{16}x(x - 12)$ is the equation

Sub $x = 4.25$ $(y \geq 5)$

$\therefore y = -\frac{3}{16}(4.25)(4.25 - 12)$

$= -\frac{3}{16}(4.25)(-7.75)$

$\doteq 6.17$

$\therefore$ at 4.25 m from the edge, the height of the tunnel is 6.17m, the 5 m tall truck will fit.