0C1/1C1 In-class Test 2, 2013, Feedback

Generally this test was quite well done with many students scoring 6 or 7. As usual most marks were lost simply by careless errors, even by students who left early. If you have time in a test or exam *check your solutions.* Some comments on the individual questions:

Q1. Most versions of this question had $b = -1$, so $-b = 1$, but then in the usual formula

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

students put -1 for the value of $-b$. Another error in this formula was to corrupt it to

$$-b \pm \frac{\sqrt{b^2 - 4ac}}{2a}.$$

Finally, in this question and some that followed students ended up with a square root of a negative number. As I mentioned in the lectures, if ever this happens to you in this course suspect that you have made a mistake.

Q2. A lot of arithmetic errors in solutions to this question, for example getting $2x - 2$ as a factor of the final quadratic and then saying that the corresponding root was 2 (instead of 1). One version of this question unfortunately had a typo in it and produced a quadratic that you can't solve. If students got that far I gave them the mark and I have no evidence that any student was disadvantaged by this typo.

Q3. Essentially this problem appeared on the practice test I put up on the web. As there solving it was easy using

$$\cos^2(A) + \sin^2(A) = 1 \quad \text{so} \quad \sin(A) = \sqrt{1 - \cos^2(A)}.$$

Q4. Lots of students drew the correct triangle but then said the side on the x-axis had a negative length, and gave a negative value to the cosine as a result. Triangles do not have negative length sides.

Q5. Generally well done though surprisingly many students got down to, for e.g., $3x = 3$ and then said 'so $x = 3$' !!

Q6. A fault here was to separately find m, c for this line but then never write down what the actual equation of the line was. Make sure you answer the question that is asked.

Q7. A rather amusing error here was to find a line through the point which was *perpendicular* rather than *parallel* to the one given, presumably because that had been asked on the practice test at the end of the Course Notes.