

ThomsonNOW info and hints PART 2:

For typing answers into ThomsonNOW in the correct form, the best guides are the answers in the back of the book, the answers on the even answer overheads in the recitations, and the answers your lecturers recommend.

HW 24 General: Using interval notation for a single value, we've used a different bracket, $\{a\}$, instead of just a or $[a]$.

HW 24A #6, #8 and HW 24B #9, #10 in ThomsonNOW, ThomsonNOW wants a multiplied out polynomial for the answer. If you are not sure what I mean, then go to the Example on p.232 of your book or check the answers for the similar types of problems in the back of your book.

NOTE: for quiz purposes, multiplying out is not required, the factored form is fine.

HW 24B #6: For this polynomial long division problem ThomsonNOW simply wants two expressions for the quotient and remainder, separated by a comma. For example: $'3x+4,2x-7'$.

HW 25, 26 - For finding rational functions problems, you should generally have $'f(x)='$ or $'y='$ and then one simplified polynomial function divided by another simplified polynomial function. Similar to polynomial functions, multiply out both the numerator and denominator polynomials.

HW 26A #8 - Use a decimal instead of a fraction 19.5, instead of $39/2$.

HW 26A #9 - Does not require you to multiply out the numerator and denominator polynomials of the rational function.

HW 26B #8 - Do not multiply out the numerator and denominator polynomials of the rational function. Leave the numerator and denominator in a factored form.

HW 26B #10: Do not use decimal coefficients in the numerator and denominator polynomials for the entered form of your answer. Simplify your rational function by multiplying by $10/10$ or $100/100$ and then looking for common integer factors in the numerator and denominator polynomials that can therefore be simplified. A different way of saying this is that the coefficients in the numerator and denominator polynomials of your rational function must be integers and that common factors should be used to reduce the integers to being as small as possible.

HW 27 General: In ThomsonNOW, the inverse function problems are generally asking simply for an expression rather than an equation. There is a template button for f inverse of x , $f^{-1}(x)$ that is available on the ThomsonNOW problems with the large equation palette, but you will not have to use it on most problems. It should be clear from the context of the problem.

HW 27B #10 - Find the subscript template on the palette

HW 27B #11 - Not 'l' or 'L', instead Illumination is 'I' or 'i'. Uppercase is better of course. If you are sure you are right, be careful and think carefully about the quantities before assuming that.

HW 28 - I could think of no appropriate hints. The problems are quite well behaved.

General: You should always give an exact answer unless asked to give an approximation, (a fraction, $\log(7)$, $\pi/3$, etc.).

General: If a problem tells you to use common logs, that means to use log base 10, ($\log(x)$, $\log(122/13)$, $\log(x+10)$, etc.)

HW 29A #18 - As in the answer to the similar problem that appears in the back of the book, ThomsonNOW does not want you to multiply out denominator of the fraction.

HW 29B #15 - For some reason, ThomsonNOW wants you to multiply out denominator of the fraction, unlike the answer in the back of the book for the similar problem.

HW 30A #4 - The problem asks for 3 significant figures, but really wants 3 decimal places. (43.56743 should be rounded to 43.567)

HW 30A #7, 30B #7,8 - type in answers in a function notation like $f(x)=-2F(x+5)$, $f(x)=-2g(x+5)$, etc.

HW 30B #6 part 6(may apply to a few other problems here and there as well) - regarding the y-intercept, when you plug zero in for x if you get something like log base 5 of 8, type it in as $(0, \log_{5}(8))$, where the base '5' should be a subscript after the word 'log'.

HW 30B #12 - Follow the rounding directions for the answer explicitly and make sure you correctly interpret the problem and what type of answer is expected. However, keep in mind that if it takes 12.2 years to reach the target population, that the target population will not be reached when 12 years have passed, so the real and more correct answer would be 13 years and rounded up. I will not try to trick you on exams with this, but be aware of this subtlety. Again, for ThomsonNOW on this particular problem, simply round to the nearest integer as it asks you to do. **Always follow the directions as explicitly as possible on problems in general, but if I am unsure on any problem, I try rounding maybe down first and then try the rounding up if that fails.**

HW 30B #13 - The normal subscript template works fine for entering q_{0} . If instead you use the asked for $q_{\{0\}}$, ThomsonNOW seems to give the subscript as soon as you press shift-underline and then you can just press zero.

HW 30B #14 - the word 'contaminated' should basically be 'returns to a safe level of contamination'. The level of radioactivity should be decreasing as time passes.

HW 31A #3,4 & HW 31B #2 - ThomsonNOW wants only the x- or y-coordinate of the x- or y-intercept rather than the more correct coordinate pair of the point where the graph of the function intersects either the x- or y-axis. On quizzes, always give answers for the x- and y-intercepts as coordinate pairs as we have done consistently in lectures.

HW 31A #14 - Use natural logs (\ln) to solve the problem.

HW 31B #2 - ThomsonNOW wants only the x- or y-coordinate of the x- or y-intercept rather than the more correct coordinate pair of the point where the graph of the function intersects either the x- or y-axis. On quizzes, always give answers for the x- and y-intercepts as coordinate pairs as we have done consistently in lectures.

HW 31B #9 - The problem is working fine in iLrn. Keep at it. Read and interpret the problem carefully.

HW 31B #11 - The wording is messed up. What you are trying to find is the following:
Express in terms of the radiation length, the thickness at which the electron loses ???% of its initial energy.
The normal subscript template works fine for entering x_{0} . If instead you use the asked for $x_{\{0\}}$, ThomsonNOW seems to give the subscript as soon as you press shift-underline and then you can just press zero.

****General:** 'separate values' means 'exact values'.

****General:** Rationalizing the denominator of something like $1/\sqrt{6}$ to $\sqrt{6}/6$ is usually not required by iLrn.

****General:** You should always give an exact answer unless asked to give an approximation, (a fraction, $\log(7)$, $\pi/3$, etc.).

HW 32A #14 & 32B #12 - You may or may not need to mess with the following, but even so this could also be useful information for transforming answers into a different form, which might be especially useful on an exam.

I did not need this, but students in the past have occasionally found the following useful. If nothing else it does talk about how to manipulate your answers into a different form when needed.

Using the idea of raising a fraction to the -1 power means to take the reciprocal:

$$\log(1/8) = \log((8)^{-1}) = -\log(8).$$

Thereby an answer such as $\log(1/3)/(\log(4/7))$ could be written several ways.

$$\log(1/3)/(\log(4/7)) = -(\log(3)/(\log(4/7))) = -(\log(1/3))/(\log(7/4)) = \log(3)/(\log(7/4))$$

For some reason ThomsonNOW has occasionally been looking for one of the answers with the negative sign in front of the fraction.

A big clue that this is a problem for you is if you are getting part 2 correct on the problem, but it is not accepting your answer to part 1.

HW 32B #10 - As you would suspect, the answer should indeed be a number of years and then rounded appropriately.

HW 32B # 14 - something like $\ln((1+x)^c)$ should be typed as $c*\ln(1+x)$

HW33A #2 - iLrn strangely does not want something like $\sqrt{8}$ simplified to $2*\sqrt{2}$.

HW33A #3 & HW33B #1 I noticed that it doesn't matter what order you put your answers in. To me, I would think this allows room for error in that we may not know the difference between csc, sec, or well you get the idea. So, be careful of that, some iLrn problems will require a specific order, as they should, while other problems will not, make sure you know which ratio corresponds to which trig function.

HW33A #7 - iLrn wants an exact decimal answer rather than an exact fraction.

HW33A #11 - The ft/sec number given in the problem has been rounded off in some cases. Therefore using that number for your calculations will prove slightly inaccurate. Only by 0.1 in my case, but that was enough to be incorrect. If you use the mi/hr and convert that to ft/sec and then using that more exact value for the ft/sec, that will work.

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HW 34A #1: not a biggie, but the triangle displayed does not have a 90 degree symbol in the picture, but the answers correspond to a right triangle.

HW 34A #3: You might want to make a note that when using your calculator, you need to use radian mode when entering your calculations.

HW34A #'s 4, 5, 10 & HW34B #6 I noticed that it doesn't matter what order you put your answers in. To me, I would think this allows room for error in that we may not know the difference between csc, sec, or well you get the idea. So, be careful of that, some iLrn problems will require a specific order, as they should, while other problems will not, make sure you know which ratio corresponds to which trig function.

HW 34B #9 & #8: The way iLrn wants you to format your answer is almost ridiculous. ... "almost" A couple of key hints: When entering in theta, it must be put in parenthesis (theta). With no spaces between it and whatever follows, such as $\sin(\theta)$ or $\cos(\theta)$.

*For **for #9**, the numerator needs to be enclosed in parentheses.

HW 34B #9 MORE - For something like the square root of $1 - (\csc(\theta))^2$ then divided by $\cos(\theta)$.

Type in your answer like $\sqrt{1 - (\csc(\theta))^2} / \cos(\theta)$. If you have the right answer, then this form will work.

NOTE: also ' $\sec(\theta)^2$ ' is interpreted by iLrn as $(\sec(\theta))^2$, which is what you want if you want to square a trigonometric function of theta.

EVEN MORE HW 34B #9 - From one of you guys; ... #9 is where I got stuck, because even if I put theta in parenthesis immediately following the square, iLrn still perceived it as if I was multiplying it. So, ... if you have something like $\sqrt{1 - \cos^2(\theta)}$ it will have to be inputted as $\sqrt{1 - (\cos(\theta))^2}$.

HW 35A & 35B: No new hints are needed.

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HW 36A & 36B: No new hints are needed.

HW 37 & 38 - on any problem requiring you answer questions about the graph of the function Make sure you have an accurate sketch of the graph in each problem, especially on that interval from $[0, 2\pi]$ that they specify for some of the parts.

Remember, zeros are numbers that cause the y value to be zero and y-intercepts are points not numbers. If there is no phase shift, use zero '0' instead of 'none' for the phase shift.

HW 38B General - A very few problems may need the use of the degree symbol, which is on the equation palette. Remember an angle answer of "5" implicitly means an angle of "5 radians", unless you explicitly use a degree symbol after the 5. Most problems needing an answer in degrees simply ask for a number and assume the answer you are giving is in degrees and therefore do not require the explicit use of the degree symbol.

HW 38B #7 - You might try working #47 from the book, check the answer in the back for #47, and then try again.

Use uppercase I for the intensity variable. Also, using parentheses around the expression you are taking the sine of might help.

HW 39B #'s 5, 7, & 8 - I can't really think of an appropriate hint, but you might check out the corresponding pictures in Section 6.7 of the book. It has a little better pictures of the objects.

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HW 40 General: Some of the problems want a less simplified version of the answers than the corresponding answers in the back of the book, so since that is less work you might try that first before going to the extraordinary lengths of simplification to get the answer in the form in the back of the book.

HW 40B #5 - There is nothing wrong with the problem. However, it is indeed one of the more challenging problem to solve. Keep at it.

HW 41A & 41B: No new hints are needed.

HW 42A #6 - You should solve the system of equations using the method of substitution done in lecture, rather than using matrices as the problem asks. It will work out correctly using either method of course.

HW 43 General - As we said in lecture standard form for these polar equations means typically to solve for r or on very rare occasions r^2 . Also, unlike the answers in the back of the book, ThomsonNOW is fine with something like $r=5/\tan(\theta)$ instead of $r=5*\cot(\theta)$, which would eliminate the fraction. Further, ThomsonNOW does not typically require the parentheses around θ (see the exception below).

HW 43 #4 - You will need to solve for θ by using an inverse trig function. The equation palette has a \sin^{-1} button that has a bunch of choices. \sin^{-1} is inverse sine, \cos^{-1} is inverse cosine, and \tan^{-1} is inverse tangent. \sin^{-1} means arcsine, which is the same thing as inverse sine. \cos^{-1} means arccosine, which is the same thing as inverse cosine. \tan^{-1} means arctangent, which is the same thing as inverse tangent. Some of the notation we used for the problems in section 6.4 will be useful here. So, $\sin^{-1}(2/5)$ is the same as when we wrote $\sin^{-1}(2/5)$.

HW 43 #5 - You need to use parentheses around θ for this particular problem. For example, most of the problems are fine with something like $\sin\theta$, $\cos\theta$, or $\tan\theta$, but this problem wants notation something like $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$.