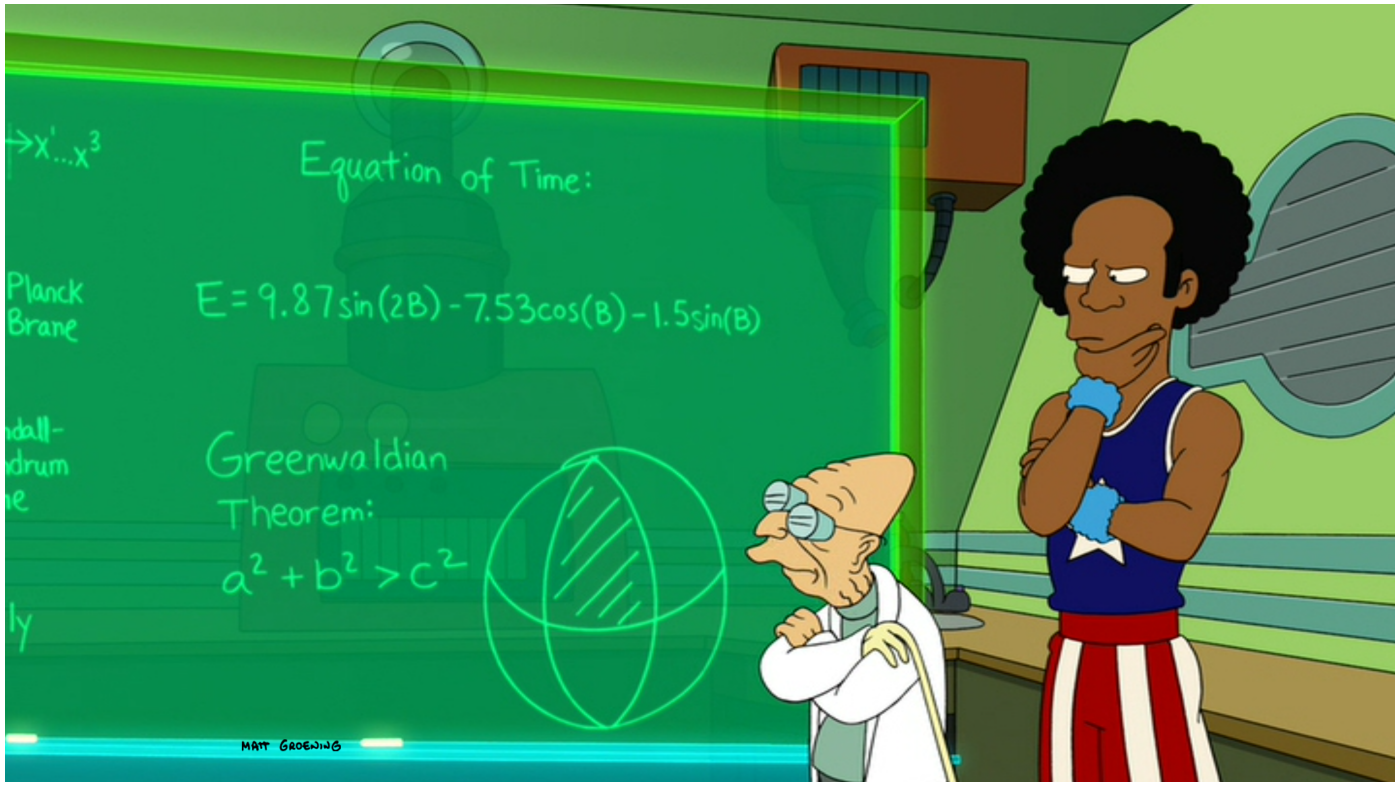


Bender's Big Score: Futurama

Futurama ™and © Fox and Disney This educational talk and related content is not specifically authorized.

Dr. Sarah

Full Professor of Mathematics

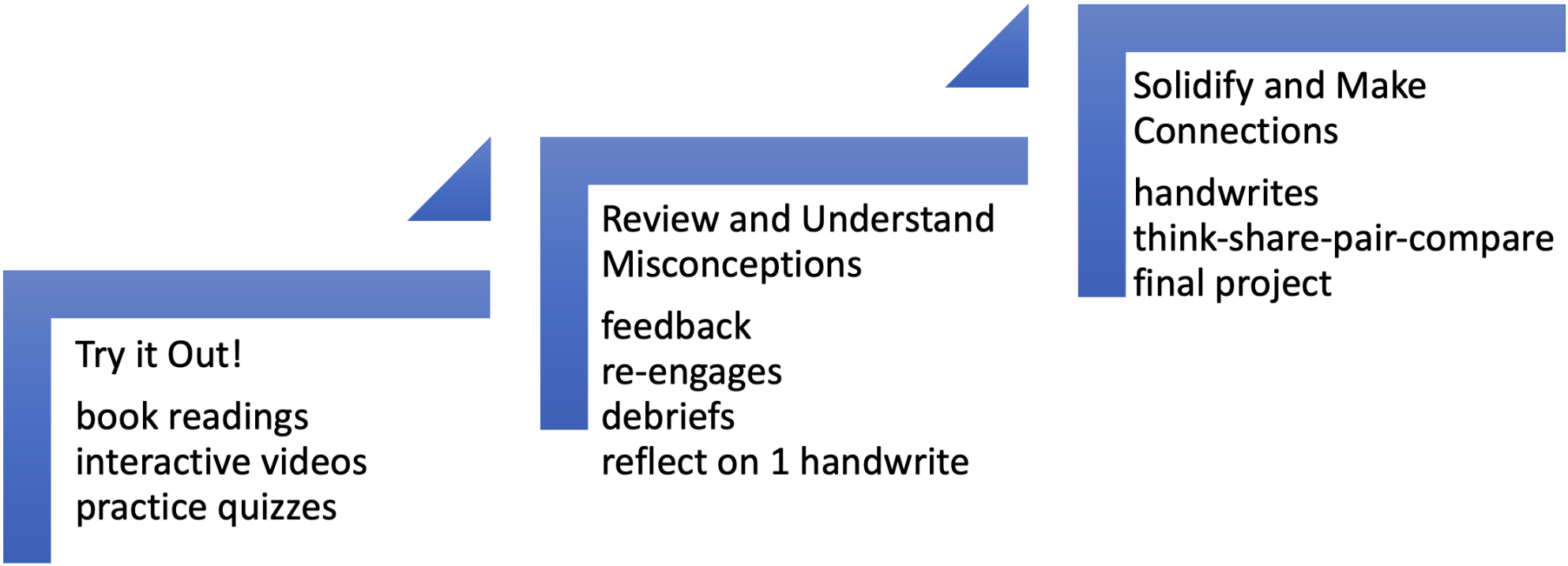
Faculty Affiliate of Gender, Women's and Sexuality Studies

Faculty Affiliate of Center for Judaic, Holocaust and Peace Studies

Faculty Affiliate of Math and Science Education Center

Mathematics connection: geometry and history of mathematics and science

I care about your success and feel a great responsibility to you as my student



Making mistakes is integral to the learning process and enriches our understanding as we extend content and clear up misconceptions.

Activities are meant to be to be started with a good faith effort and ideally completed by the end of the listed day (or earlier, as they are already open!). However, there's some built-in flexibility: the final deadline is 10 a.m. on the next academic day. I strongly encourage you to work ahead and finish items when listed to stay on track. Every item on this PDF calendar is a "To do" or "Mark as done" item in ASULearn that must be "Done" at a passing level. This includes marking that you read postings, feedback and readings plus successfully completing interactive videos, quizzes, handwrites, re-engages, debriefs, and any other assigned activities. Strict 10 a.m. deadlines apply to handwrites and major assignments. Other items should be attempted on the day they are listed, but second-chance opportunities will remain open until 3/3 at 10 a.m. Some days are lighter than others and it will help you to progress on upcoming activities in advance. Note that the ASULearn Calendar may not show all required items. Always refer to this PDF calendar, my announcement postings, and the grey headers followed by activities on our main ASULearn page for a complete list.

	begin and good faith effort by Tuesday final deadline 10a.m. Thur	begin and good faith effort by Thursday final deadline 10a.m. Tues*
1/14– 1/16	read this week's announcement posting** read percent, proportion and growth 1005 and percents in finance interactive video percent practice quiz add ASULearn profile pic	share your own intro video read syllabus re-engage percents
1/21– 1/23	read this week's announcement posting** peer review your classmates videos read saving and investing lump sums lump sum interactive video	lump sum practice quiz research real-life rates and turn in
1/28– 1/30	read posting(s), assignment feedback, grades** re-engage lump sums handwrite intro interactive video Benjamin Franklin handwrite—**strict deadline** must be turned in to the ASULearn assignment	debrief handwrite read saving and investing periodic payments periodic payment interactive video periodic payment & lump practice quiz
2/4– 2/6	read posting(s), assignment feedback, grades** re-engage periodic payments lottery decisions handwrite—**strict deadline**	debrief handwrite read loans and amortization loan interactive video

Statement on Student Engagement with Courses

In its mission statement, Appalachian State University aims at "providing undergraduate students a rigorous liberal education that emphasizes transferable skills and preparation for professional careers" as well as "maintaining a faculty whose members serve as excellent teachers and scholarly mentors for their students." Such rigor means that the foremost activity of Appalachian students is an intense engagement with their courses. In practical terms, students should expect to spend two to three hours of studying for every hour of class time. Hence, a fifteen-hour academic load might reasonably require between 30 and 45 hours per week of out-of-class work.

Printable PDF of the Statement on Student Engagement with Courses (PDF, 48 KB)

need help from me, math dept tutoring, your classmates, or tech support?

	begin and good faith effort by Tuesday final deadline 10a.m. Thur	begin and good faith e final deadline 10a.m. T
1/14– 1/16	read this week's announcement posting** read percent, proportion and growth 1005 and percents in finance video percent practice quiz add ASULearn profile pic	share your own intro v read syllabus re-engage percents

begin by 1/14 with good faith effort—final by 10am 1/16


read this week's announcement posting  ✓ Done


read percent, proportion and growth  ✓ Done


1005 and percents in finance interactive video ✓ Done


percent practice quiz To do

You must
✓ Receive a grade
✗ Receive a passing grade


add ASULearn profile picture (name/Edit pr

Interest as a Percent

The last thing we need to look at before beginning our study of finance is how to handle interest as a percent. Suppose that we buy \$10,000 worth of stock that has an expected return of 6.75% interest in a year. The company's payment policy is to send stockholders an annual dividend check. Assuming that the actual earnings are 6.75% per year, how much will the dividend check be?

To figure the interest, we need to calculate what is 6.75% of 10,000. We can use our standard translations for 'of' and 'is' to get:

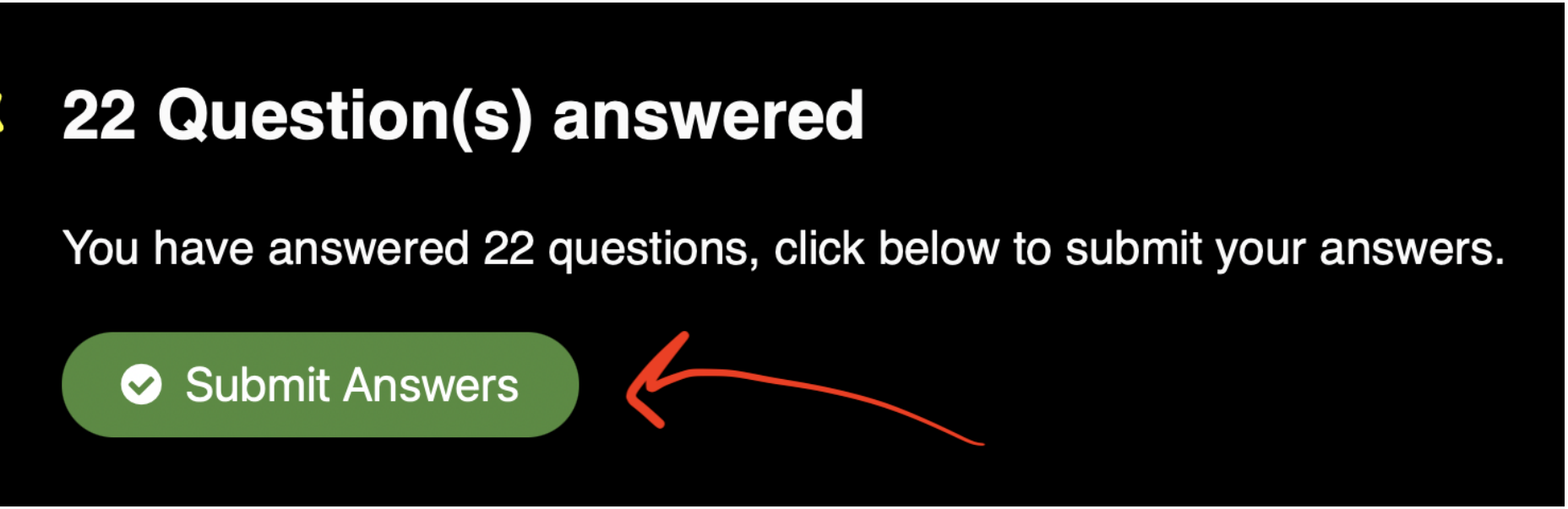
$$0.0675(10000) = \$675.$$

In general, *interest earned in one period* can be calculated as:

Interest Earned in One Period: $I = r\,P$

where r is the interest rate and P is the amount earning interest, often called the principal.

interactive video activities, repeatable



begin by 1/14 with good faith effort—final by 10am 1/16

read this week's announcement posting ✓ Done

read percent, proportion and growth ✓ Done

1005 and percents in finance interactive video To do

You must
- ✓ Receive a grade
- ✗ Receive a passing grade

percent practice quiz

add ASULearn profile picture (name/Edit profile) To do

begin by 1/14 with good faith effort—final by 10am 1/16


read this week's announcement posting  ✓ Done


read percent, proportion and growth  ✓ Done


1005 and percents in finance interactive video ✓ Done


percent practice quiz To do

You must
✓ Receive a grade
✗ Receive a passing grade


add ASULearn profile picture (name/Edit pr

begin by 1/14 with good fait...

- [x] read this week's announc...
- [x] read percent, proportion ...
- [x] 1005 and percents in fina...
- [ ] percent practice quiz
- [ ] add ASULearn profile pic...

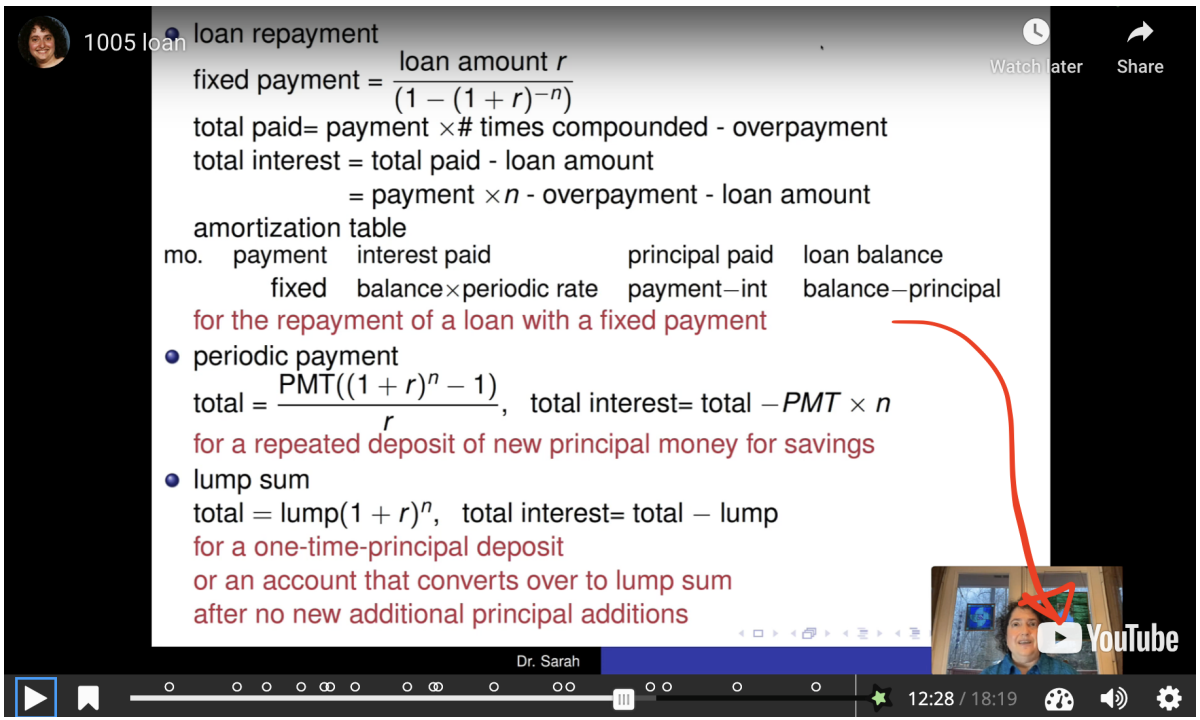
need help from me, math dept tutoring, your classmates, or tech support?

(optional) slides

Dr. Sarah's Announcements

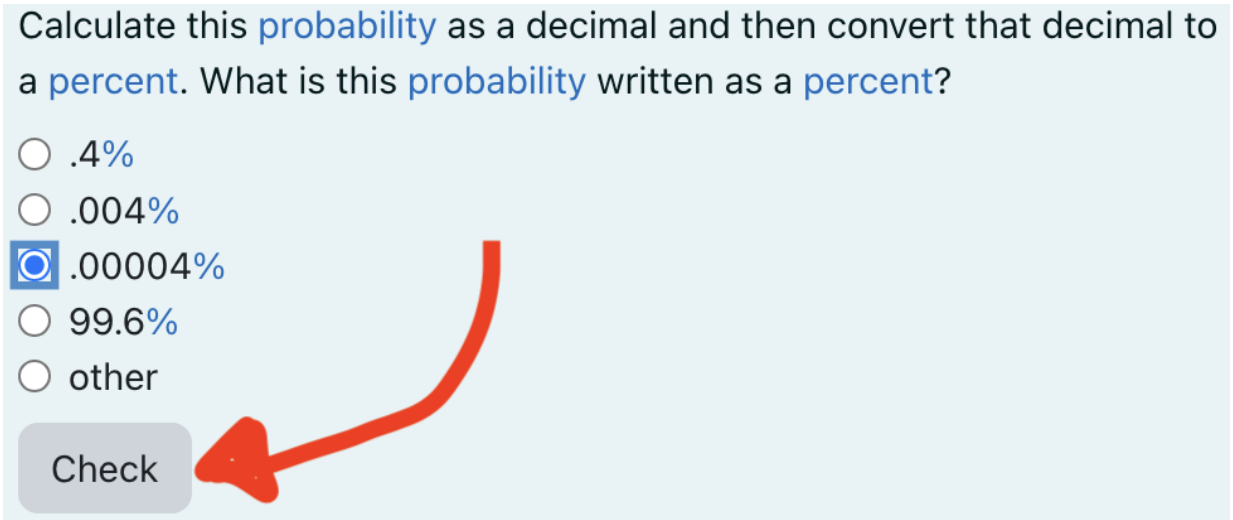
What is Due When?

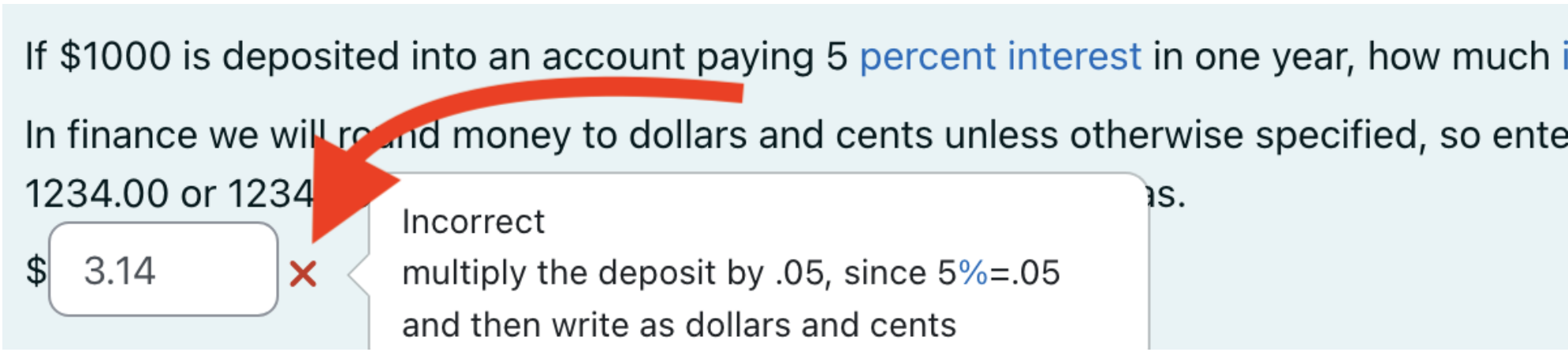
grades



practice with instantaneous feedback from me, repeatable

Instantaneous Feedback opens after you **Check** a response, so you can retake it. For a box, **red x for feedback**.





Use my feedback to check responses until correct.

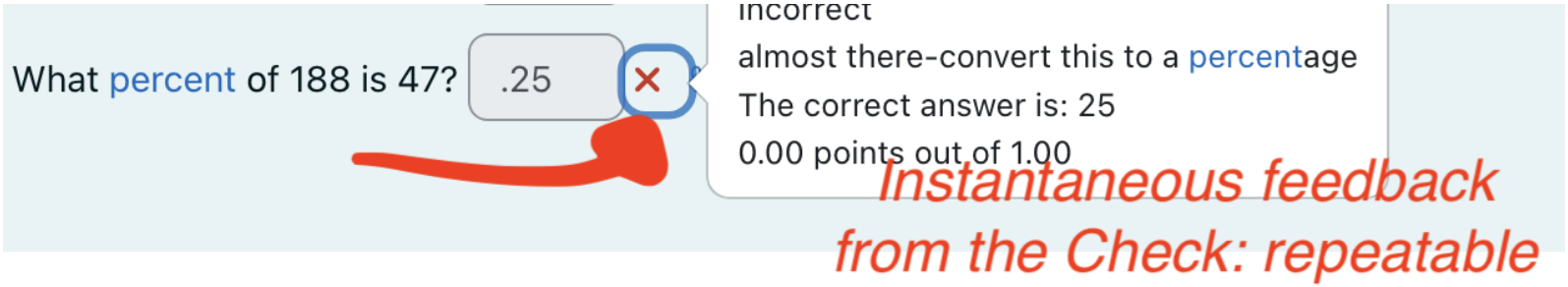
Re-attempt quiz

Grading method: Highest grade

Grade to pass: 70.00 out of 100.00

Summary of your previous attempts

Attempt	State	Points / 31.00	Grade / 100.00	Review
1	Finished	18.90	60.97	Review



"of" typically means multiply in real-life contexts of algebra

What is 15% of 200? convert the percentage of 15% to a decimal .15 and then multiply by 200

General feedback below each question when you Review a quiz

8% of what number is 122? asks for a number x so that .08x=122, ie divide both sides by .08

What percent of 188 is 47? asks for a percentage x so that x188=47, so divide by 188 and then write as a percent

Use my feedback to check responses until correct.

If $800 is deposited into an account paying 4 percent interest in one year, how much interest is earned?

In finance we will round money to dollars and cent[s] unless otherwise specified, so enter your final response exactly as a number with 2 decimals, like 1234.00 or 1234.56, with no extra symbols and no extra commas.

glossary/wiki for finance: percent

$ 1234.00 ✖

If the outstanding balance on a loan is $1035.00 and the loan terms are 8% each year compounded monthly as the interest rate, i.e. 8%/12 applied each month, equivalently $\frac{.08}{12}$ each month, then how much interest as money would be owed on the loan that month?

$ 82.8 ✖

In the investopedia.com[ack for Retirement by Knowing How Much You Need to Save[ould save enough money for retirement to have an annual retire[ome." According to this advice, if we have a pre-retirement incom[r in retirement?

$ 37600.00 ✔

We would need that ev[at. To do that, some suggest a 50-30-20 rule, which was popula[th: The Ultimate Lifetime Money*. The idea is to spend 50% o[gations like minimum payments on loans, 20% on savings, and 30% on anything else we want. As of November 2022, ZipRecruiter says that the average weekly payment in North Carolina is $1043.00 a week. How much of that should we put into savings?

$ 521.5 ✖

Check

percent

Percent means out of 100, so 5% is $\frac{5}{100}$=.05, ie moving the decimal place over to the left 2 places. Historically multiples of $\frac{1}{100}$ were common in taxation and computations. The decimal version came much later!

OK

collate handwritten labs into 1 multipage PDF

Add submission

Maximum file size: 800 MB, maximum number of files: 1

Files

PDF

name.pdf

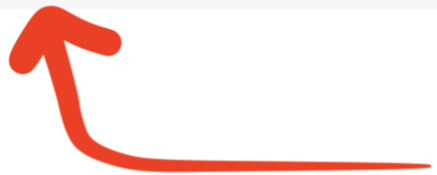
Accepted file types:

PDF document .pdf

Save changes Cancel

Feedback files

personalizedfeedback.pdf



Grade breakdown

scale	no grade	Padawan (still training)	Jedi	Jedi Master	see your personalized feedback

- Padawans are training to one day become a Jedi.

resubmit

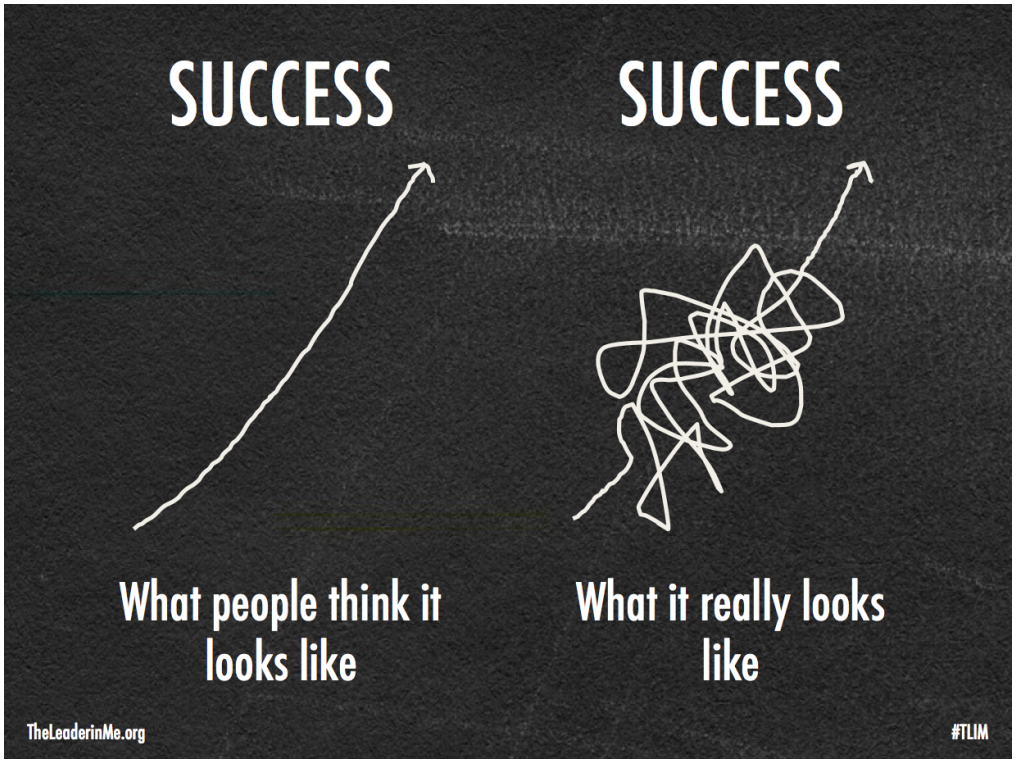
Edit submission | Remove submission

- Both Jedi and Jedi Master ratings earn completion.
- I'll respond with feedback on your PDF

think-share-pair-compare forum February 18–20

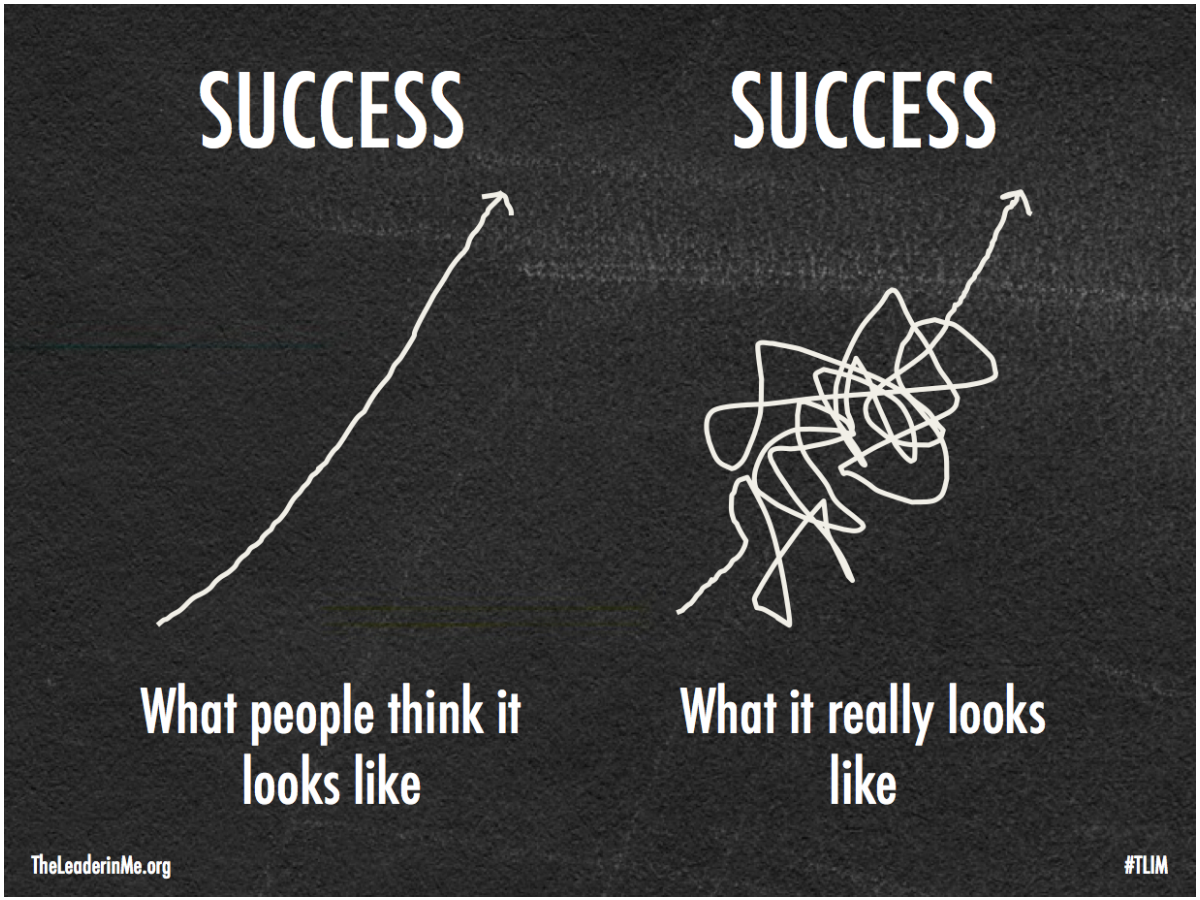
- **Think and Share** about possible answers on your own and add a new discussion topic about them
- **Pair** look at others postings
- **Compare** your reply separately to at least two of your classmates in a meaningful way. Don't just say, "I disagree." Instead, say, "Joel, I think we also need to consider..." Or, "Joel, I don't agree because..." as you compare and contrast your responses and summarize what you chose and why. You might also pose questions, answer questions, and extend ideas. Be sure to use their preferred name!

debrief



https://mathequalslove.blogspot.com/p/free-classroom-posters.html
https://www.leaderinme.org/blog/the-power-of-a-growth-mindset/

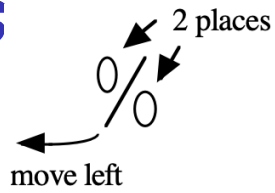
- Effective ASULearn Engagement 50%
  many have 2nd chances, lowest 1 dropped
- Handwrites and Think-Share-Pair-Compare 30%
  can revise one handwrite as you reflect on it to replace it
- Final Project 20%



Learning Goals and Outcomes

- Thinking Critically and Creatively
  - I can explore applications of algebra in everyday life, investigate real-world data and interpret key features.
  - I can understand the significance of variables for interest, lump sum, periodic payment and loan repayment formulas.
  - I can apply these formulas to compute and interpret savings, payments, and interest earned or owed on student, car, house, credit card and payday loans.
  - I can utilize technology to answer real-world questions and interpret results.
- Communicating Effectively
  - I can communicate quantitative information using a variety of representations, including numerical, algebraic, and tables, in handwritten documents and a final project presentation.
- Quantitative Literacy Learning Goals (see syllabus)

Interest and Percents



- percent “percentum” “out of one hundred”
- Babylonians 20% interest: 20 out of 100 = $\frac{20}{100} = .20$

YBC 04698: 17 problems statements on interest rates, prices and profit
https://cdli.ucla.edu/dl/photo/P255010.jpg

- Latin “id quod inter est” or “that which is between.”
- Write 8.5% as a decimal. Convert 16 to a percent.
- 80% of our final, pre-retirement income
  of typically means multiply in real-life contexts
- 50-30-20 rule needs & obligations-wants-savings

Debt-to-Income Ratio and Percents

$$35\% = \frac{\text{monthly debt}}{\text{monthly income}}$$

http://stopthedebttrap.org/takeaction/ndoa/kansas-city-story/

Debt-to-Income Ratio and Percents

$$35\% = \frac{\text{monthly debt}}{\text{monthly income}}$$

http://stopthedebttrap.org/takeaction/ndoa/kansas-city-story/

$$.35 = 35\% = \frac{1000}{\text{monthly income}}$$

Debt-to-Income Ratio and Percents

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$$.35 = 35\% = \frac{1000}{\text{monthly income}}$$

$$.35\text{monthly income} = 1000$$

Debt-to-Income Ratio and Percents

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$$.35 = 35\% = \frac{1000}{\text{monthly income}}$$

$$.35\text{monthly income} = 1000$$

$$\text{monthly income} = \frac{1000}{.35}$$

Debt-to-Income Ratio and Percents

$$35\% = \frac{\text{monthly debt}}{\text{monthly income}}$$

http://stopthedebttrap.org/takeaction/ndoa/kansas-city-story/

$$.35 = 35\% = \frac{1000}{\text{monthly income}}$$

$$.35\text{monthly income} = 1000$$

$$\text{monthly income} = \frac{1000}{.35} \approx 2857.14285714 \approx 2857.14$$

$$\text{annual income} = 12 \times 2857.14 = 34285.68$$

- Dr. Sarah's e-Z check-in (internet allowing)

  Monday, Wednesday 10–10:30am, 11:30–12:30pm
  Sunday, Tuesday, Thursday 7–7:45pm
  drop in—no appointment needed
  I want to hear how you are doing!
- private or whole class forum
- math department tutoring

use my instant feedback and personalized feedback to help

keep scrolling down

I care about you and your success!

http://alangregerman.typepad.com/.a/6a00d83516c0ad53ef0168e783575e970c-800wi