

Each WA is worth 10 points. Work right on these pages, then scan and upload or give to me in print. You can work together or see a tutor, but NEVER copy. This WA is for a grade, so dishonesty or cutting corners may earn a 0 for all involved.

1. [3 pts] Jax planted 3.78 acres of potatoes in 2020. He planted 2.4 acres in 2017. Is this a percent increase or decrease, and by what percent? Show clear work, and round to the nearest tenth of a percent.

2. [4 pts - 1 each] For each situation below, say Yes or No to whether it is meaningful to apply the percent to the other number shown. Briefly justify each response by referring to “older numbers” in the problem.
 - (a) Greta paid \$21.73 for an SRU t-shirt that was marked 10% off.

 - (b) Reva’s school has experienced a 5.2% enrollment increase this year, bringing the total enrollment to 5,248.

 - (c) The water level in the reservoir is down 4.8% from last year’s level of 19.7 feet.

 - (d) Turnpike tolls will go up 2.1% next year. My commute currently costs \$3.50 every day.

3. [3 pts - 0.5 each] Consider this problem: “Tony paid \$100 for a coat that had been marked 20% off. What was the original price of the coat (before the discount)?” We’ll explore WHY it doesn’t make sense to apply percents to the “newer” number in context. This content is not in your notes.

Many students think - CORRECTLY - that we need to add the discount back onto the \$100 to find the original price. That’s exactly right, but where they err is in what the dollar amount of the discount actually is.

- (a) Suppose a learner believes that the discount is 20% of \$100. What dollar amount is that?
- (b) Now add that amount back onto the \$100. What total does this give as the supposed original price for the coat?
- (c) Let’s use Polya’s Fourth Step of Problem Solving (Look Back) to see how the result in part (b) works out: Find 20% of the “original price” we found as the answer in part (b).
- (d) So we just found the DISCOUNT; that is, we just found how much money in actual dollars Tony would save. Subtract that savings from the “original price” in part (b).
- (e) Did you get \$100 above? Because we are told that he PAID \$100. If your answer in part 3d is LESS than \$100, then either Tony got ripped off...OR this process was wrong from the beginning. Was \$100 the “older” number in the context of the problem?
- (f) Rewrite the Big Rule of Percent Applications below.