

$$\frac{42}{70} \cdot \frac{1}{10}$$

$$\frac{42}{1000}$$

$$\left(\frac{71}{1000}\right)^{1000}$$

$$\left[\frac{21}{10}\right] \%$$

Quiz 2

$$\frac{42}{2}$$

$$\frac{21}{10}$$

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1) Simplify the expression below and write it as a percent.

$$\frac{1}{20} (18^{-1} + 24^{-1})^{-1}$$

$$\left(\frac{\frac{21}{10}}{100}\right) 100$$

$$\frac{1}{70} (18 + 24)$$

$$\frac{1}{70} (42)$$

$$\frac{21}{10} \cdot \frac{1}{100} \left(\frac{21}{1000}\right)^{1000}$$

$$\left[\frac{21}{10}\right] \%$$

$$\frac{42 \div 2}{70 \div 2}$$

$$\left[\frac{21}{10}\right]$$

$$\frac{21}{10} \%$$

2) Multiply out and simplify. writing the simplified answer in the box.

$$(x-1)(x^3+x^2+x+1)$$

$$x^4 + x^3 + x^2 + x$$

$$-x^3 - x^2 - x - 1$$

$$x^4 - 1$$

$$x^4 - 1$$

3) Multiply out and simplify, writing the simplified answer in the box.

$$\left(\frac{5a - 3ab}{2a} \right) \left(\frac{26a - 52b}{13} \right)$$

$$(5a - 3ab) \left(\frac{13a - 52b}{13} \right)$$

$$\frac{65a^2 - 260ab - 39a^2b - 156ab^2}{13}$$

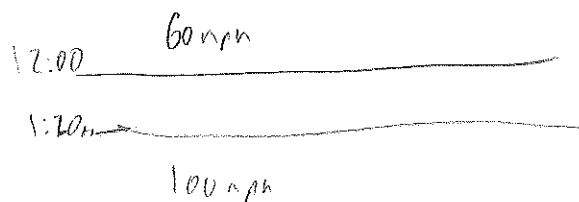
$$\frac{-156ab^2 - 39a^2b - 260ab + 65a^2}{13}$$

4) A bad guy leaves Isla Vista at midnight, traveling on the 101. To avoid being pulled over, he maintains a speed of 60 miles per hour. At 1:20AM, Jason Borne leaves Isla Vista in the same direction at 100 miles per hour. At what time will Jason catch up to the bad guy?

$$6 \times 7 = 42$$

$$6 \times 8 = 48$$

1:20 AM



60 mph

100 mph

60 mph

12:00

60 + 20 miles

80 miles

100 miles

80

100

$$60 \left(\frac{80}{100} \right)$$

$$\frac{6 \times 80}{100}$$

6 x 8

2:08 AM

What was the problem was asking you to do?

The problem is asking me to simplify my expression and write it as a percent.

What was the mistake(s) in your work?

My mistake was that I thought i had to divide it by 100 and then multiply it by 100. Which would just I also thought I could distribute the negative exponent to both terms in the parenthesis, but i can only do that if they are being multiplied.

Correctly and completely rework the problem, explaining your steps as you go.

Done

We know that mistakes are simply an opportunity to learn; what did you learn from this mistake?

I learned i cannot distribute a term outside a parenthesis to all terms in the parenthesis if the terms are connected by an addition sign. This can only be done with multiplication. I also learned that it would not make sense to divide the term by 100 and then divide since it cancels each other out. The fact that it is written as a fraction already indicates to me that i must multiply it by 100.

1) Simplify the expression below and write it as a percent.

$$\frac{1}{20} (18^{-1} + 24^{-1})^{-1}$$

• I made them have a common denominator

$$\frac{1}{20} \left(\frac{1}{18} \times 4 + \frac{1}{24} \times 3 \right)^{-1}$$

$$\frac{1}{20} \left(\frac{4}{12} + \frac{3}{12} \right)^{-1}$$

• I added them under the same denominator.

$$\frac{1}{20} \left(\frac{7}{12} \right)^{-1}$$

• I flipped the fraction since the negative exponent allows me to.

$$\frac{1}{20} \left(\frac{12}{7} \right)$$

$$\left(\frac{12}{140} \right) 100$$

$$\frac{36}{70} 100$$

$$\boxed{\frac{360}{7}} \%$$

• I multiplied the resulting fraction by 100 since I wanted like to represent it as a percent.

$$\begin{array}{r} 20 \\ \times 7 \\ \hline 140 \end{array}$$

3) Multiply out and simplify. writing the simplified answer in the box.

$$\left(\frac{5a-3ab}{2a}\right)\left(\frac{26a-52b}{13}\right)$$

$$\frac{13(2a-4b)}{13}$$

• I factored out 13

$$\left(\frac{5a-3ab}{2a}\right)\frac{(2a-4b)}{1}$$

• I factored out a. and cancelled it out with the denominator to allow them to all have the same denominator.

$$\frac{a(5-3b)}{2a}$$

$$\left(\frac{5-3b}{2}\right)\frac{(2a-4b)}{1}$$

$$\frac{(5-3b)(2a-4b)}{2}$$

• I cancelled out the 2.

$$\frac{(5-3b)(a-2b)}{1}$$

$$(5-3b)(a-2b)$$

• I forgot the problem and wrote out my answer.

$$5a-10b-3ba+6b^2$$

What was the problem was asking you to do?

The problem is asking me to multiply and then simplify my answer.

What was the mistake(s) in your work?

My mistake was that I thought I could cancel out the 2a fact with 26a, but i cannot because 26a is connected by a subtraction sign. I would need to fact out an a to cancel it out with another a. Also i had to cancel out like terms to simply the problem before multiplying.

Correctly and completely rework the problem, explaining your steps as you go.

Done

We know that mistakes are simply an opportunity to learn; what did you learn from this mistake?

I learned I cannot cross out terms if they are connected to something else with an addition or subtraction sign. I must factor out a term before being able to cross it out.

4) A bad guy leaves Isla Vista at midnight, traveling on the 101. To avoid being pulled over, he maintains a speed of 60 miles per hour. At 1:20AM, Jason Borne leaves Isla Vista in the same direction at 100 miles per hour. At what time will Jason catch up to the bad guy?

20

12:00 am $\frac{60 \text{ miles}}{1 \text{ hour}}$

1:20 am $\frac{100 \text{ miles}}{1 \text{ hour}}$

$$d = 60t$$

$$d = 100(t - 1.33)$$

$$60t = 100(t - 1.33)$$

$$60t = 100t - 133$$

$$-100t \quad -100t$$

$$-40t = 133$$

$$-40 \quad -40$$

$$t = 3.325$$

$$t = 3 \text{ hours and } 20 \text{ minutes}$$

~ 3:20 am

I drew a line representing individuals going in a single direction at different rates.

I wrote their rates and filled in the $d = rt$ with this information.

I set their distance to each other and subtracted time from t for Jason since he left later. I set the equations equal to each other since the distance is the same.

I solved for t to find time and added it to the starting midnight time.

What was the problem was asking you to do?

The problem is asking me to solve a car problem where two individuals at different speeds meet at the same time.

What was the mistake(s) in your work?

My mistake was that I thought I could solve it by taking percentages and had no idea how to set up the problem to solve it.

Correctly and completely rework the problem, explaining your steps as you go.

Done

We know that mistakes are simply an opportunity to learn; what did you learn from this mistake?

I learned I must set up by problem first with a picture and then with the distance formula to make sense of how to solve the problem correctly.