

Fractions

Lesson 3

Thursday 25th June 2020

L.0 - I am learning to answer reasoning and problem fraction questions.

Starter:

Leanna has a full tin of paint. She uses $\frac{1}{3}$ of the tin on Friday, $\frac{1}{21}$ on Saturday and $\frac{2}{7}$ on Sunday.
How much paint does she have left?



Answer:

Leanna has a full tin of paint. She uses $\frac{1}{3}$ of the tin on Friday, $\frac{1}{21}$ on Saturday and $\frac{2}{7}$ on Sunday.
How much paint does she have left?



$$\begin{aligned} & 1 - \frac{1}{3} - \frac{1}{21} - \frac{2}{7} \\ &= \frac{21}{21} - \frac{7}{21} - \frac{1}{21} - \frac{6}{21} \\ &= \frac{7}{21} = \frac{1}{3} \end{aligned}$$

Revision

Fractions – Addition and Subtraction

Watch these adding and
subtracting fraction videos:

<https://vimeo.com/413669158>

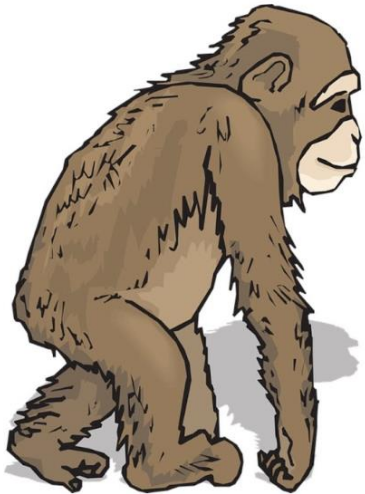
<https://vimeo.com/413669158>

Reasoning Questions

A.P.E.

Answer it

What is the answer to the question you've been asked?



Prove it

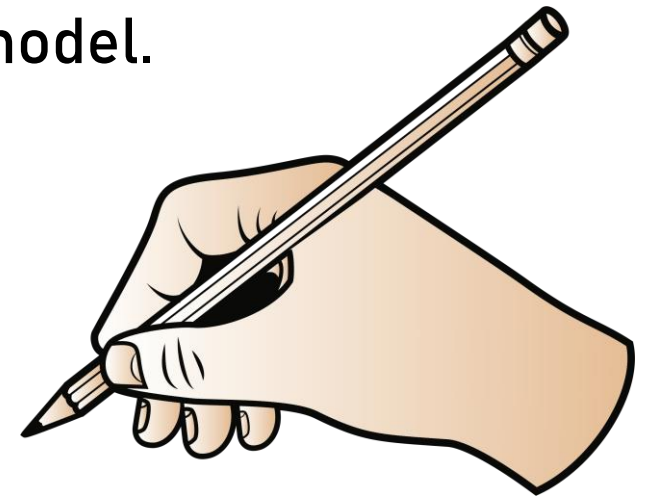
Show how you know that is the answer with pictures, diagrams, calculations or in another way.

Explain it

Write some sentences which make it clear why you came to your answer.

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Remember some answers require a written answer. When you see the words 'explain' or 'prove it,' use the A.P.E model.



This could also explain the mistakes that have been made.

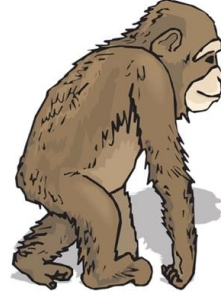
Let's practise using APE:

Your turn:

A.P.E. **Answer it**
What is the answer to the question you've been asked?

Prove it
Show how you know that is the answer with pictures, diagrams, calculations or in another way.

Explain it
Write some sentences which make it clear why you came to your answer.



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4a. Look at the subtraction below.

$$\frac{10}{15} - \frac{9}{45} = \frac{21}{45}$$



The answer is $\frac{7}{15}$

The answer is wrong. It should be $\frac{1}{45}$



Who is correct? Prove it.



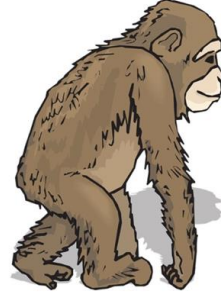
R

How could this answer be improved further?

A.P.E. Answer it
What is the answer to the question you've been asked?

Prove it
Show how you know that is the answer with pictures, diagrams, calculations or in another way.

Explain it
Write some sentences which make it clear why you came to your answer.



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4a. Look at the subtraction below.

$$\frac{10}{15} - \frac{9}{45} = \frac{21}{45}$$



Libbie

The answer is $\frac{7}{15}$

The answer is wrong. It should be $\frac{1}{45}$



Will

Who is correct? Prove it.



R

Libbie is correct. The answer is $\frac{7}{15}$ not $\frac{1}{45}$.

The question asks you to prove it. You need to explain and prove why Libbie is correct.

4a. Look at the subtraction below.

$$\frac{10}{15} - \frac{9}{45} = \frac{21}{45}$$



The answer is $\frac{7}{15}$

The answer is wrong. It should be $\frac{1}{45}$



Who is correct? Prove it.

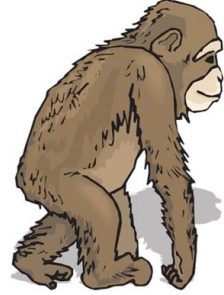


R

A.P.E. **Answer it**
What is the answer to the question you've been asked?

Prove it
Show how you know that is the answer with pictures, diagrams, calculations or in another way.

Explain it
Write some sentences which make it clear why you came to your answer.



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Libbie is correct. The answer is $\frac{7}{15}$ not $\frac{1}{45}$. Libbie has simplified $\frac{21}{45}$ by using the common denominator of 3. 21 divide by 3 is 7 and 45 divide by 3 is 15.

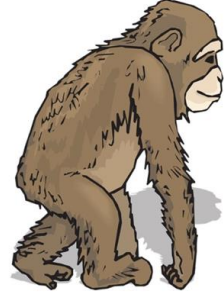
Let's practise using APE:

Your turn:

A.P.E. **Answer it**
What is the answer to the question you've been asked?

Prove it
Show how you know that is the answer with pictures, diagrams, calculations or in another way.

Explain it
Write some sentences which make it clear why you came to your answer.



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Alex is adding fractions.

$$\frac{3}{5} + \frac{1}{15} = \frac{4}{20} = \frac{1}{5}$$

Do you agree with her?

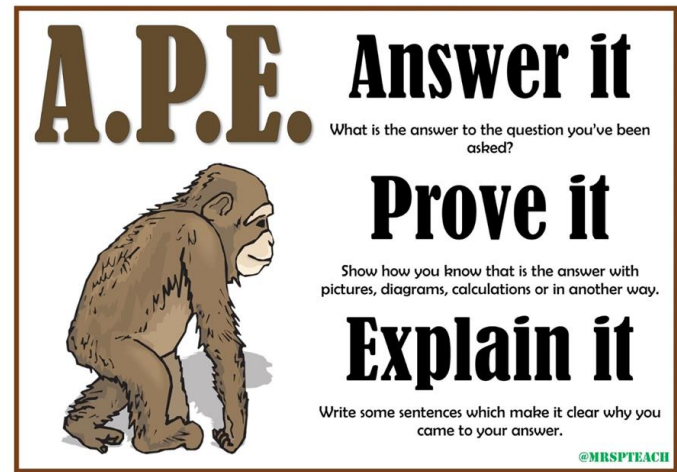
Explain your answer.

Can you improve this answer?

Alex is adding fractions.

$$\frac{3}{5} + \frac{1}{15} = \frac{4}{20} = \frac{1}{5}$$

Do you agree with her?
Explain your answer.



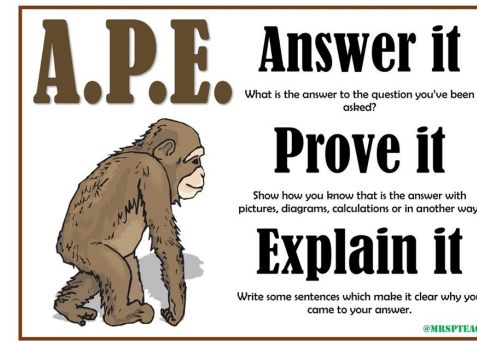
I do not agree with Alex.
She has added the denominators incorrectly and the answer should be 10/15 and then simplified to 2/3.

This answer needs to explain the mistake that Alex made and how to get to the answer of 10/15.

Alex is adding fractions.

$$\frac{3}{5} + \frac{1}{15} = \frac{4}{20} = \frac{1}{5}$$

Do you agree with her?
Explain your answer.



I do not agree with Alex. She has added the denominators incorrectly by adding 5 and 15 to make 20. She needs to make the denominator the same. She can do this by multiplying the numerator and denominator by 3 which makes 9/15.

$$\frac{9}{15} + \frac{1}{15} = \frac{10}{15} = \frac{2}{3}$$

You add the numerators together and keep the denominator the same which will total 10/15 and then this answer can be simplified by using the common multiple of 5 (10 divided by 5 is 2) and (15 divide by 5 is 3) giving you the answer of 2/3.

(You could use diagrams to show this to make it less wordy)

Problem Solving Questions

Your Turn

Some word problems include more than one question. Make sure you answer them all!

Dora is baking muffins.

She uses $2\frac{1}{2}$ kg of flour, $1\frac{3}{5}$ kg of sugar and $1\frac{1}{4}$ kg of butter.

How much flour, sugar and butter does she use altogether?

How much more flour does she use than butter?

How much less butter does she use than sugar?

Answers:

Dora is baking muffins.

She uses $2\frac{1}{2}$ kg of flour, $1\frac{3}{5}$ kg of sugar and $1\frac{1}{4}$ kg of butter.

How much flour, sugar and butter does she use altogether? $5\frac{7}{20}$ kg

How much more flour does she use than butter? $1\frac{1}{4}$ kg

How much less butter does she use than sugar? $\frac{7}{20}$ kg

$$1\frac{3}{5} \text{ kg} - 1\frac{1}{4} \text{ kg} = \frac{7}{20} \text{ kg}$$

The LCM is 20 so...

$$1\frac{12}{20} \text{ kg} - 1\frac{5}{20} \text{ kg} = \frac{7}{20} \text{ kg}$$

$$2\frac{1}{2} \text{ kg} + 1\frac{3}{5} \text{ kg} + 1\frac{1}{4} \text{ kg} = 5\frac{7}{20} \text{ kg}$$

You need to look for the lowest common multiple (LCM) of 2, 5 and 4 which is 20.

$$2\frac{10}{20} \text{ kg} + 1\frac{12}{20} \text{ kg} + 1\frac{5}{20} \text{ kg} = 5\frac{7}{20} \text{ kg}$$

$$\frac{10}{20} \text{ kg} + \frac{12}{20} \text{ kg} + \frac{5}{20} \text{ kg} = \frac{27}{20} \text{ kg} = 1\frac{7}{20} \text{ kg}$$

$$1\frac{7}{20} \text{ kg} + 2 + 1 + 1 = 5\frac{7}{20} \text{ kg}$$

$$2\frac{1}{2} \text{ kg} - 1\frac{1}{4} \text{ kg} = 1\frac{1}{4} \text{ kg}$$

The LCM is 4 so..

$$2\frac{2}{4} \text{ kg} - 1\frac{1}{4} \text{ kg} = 1\frac{1}{4} \text{ kg}$$

Problem Solving Questions

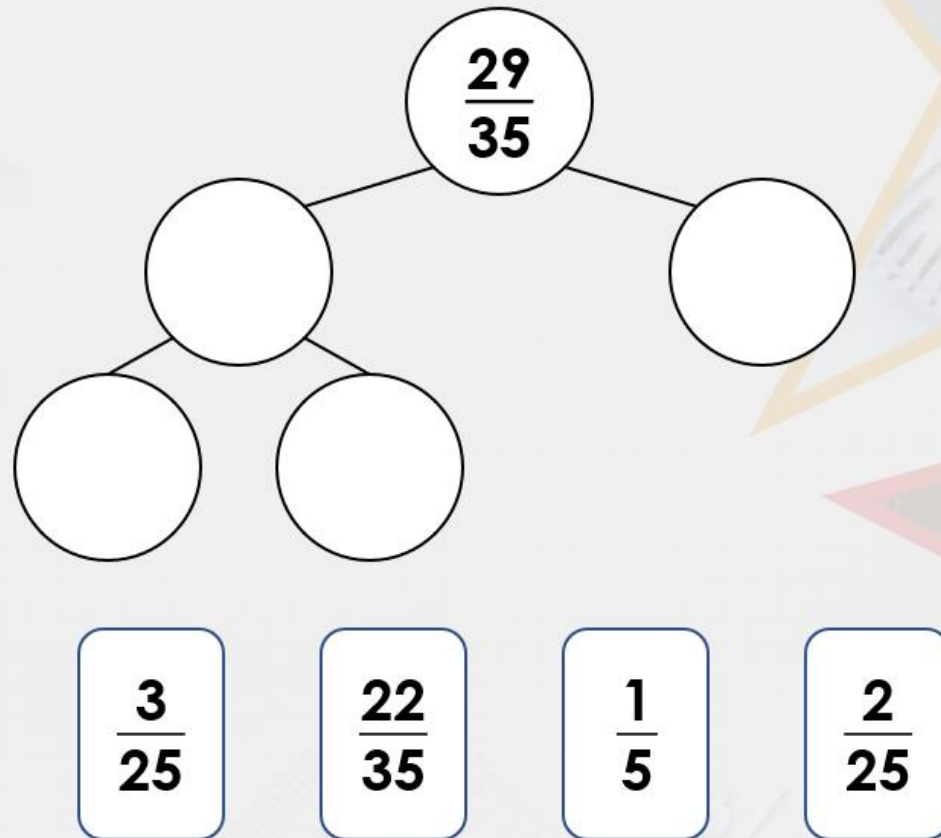
Your Turn

How are you going to solve this?

Look at the denominators.

Which would you try first to see if you can make $\frac{29}{35}$?

Arrange the digit cards in the correct place to complete the part-whole model.



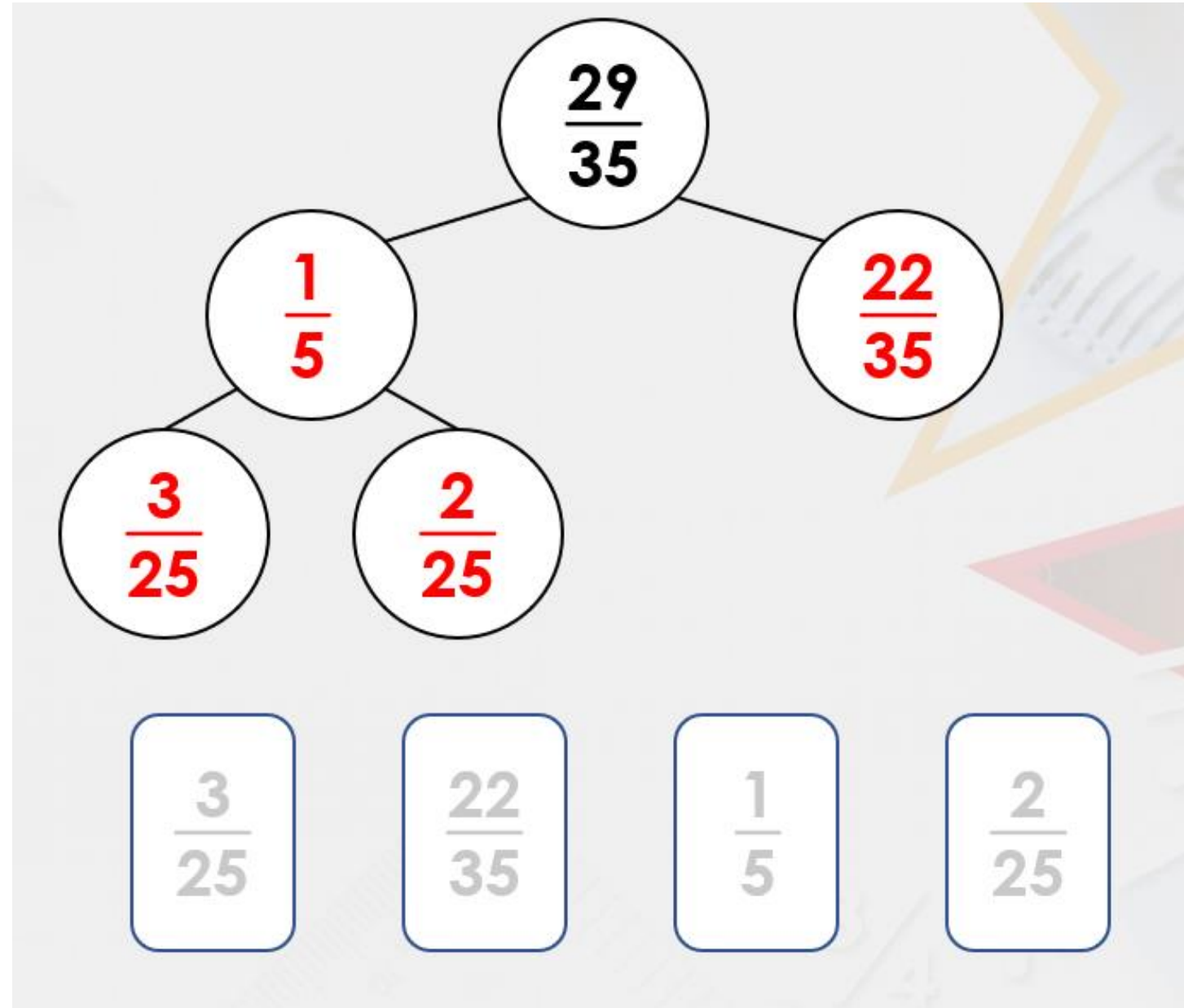
Answers:

Look at the denominators. Which would you try first to see if you can make $29/35$?

Try $22/35$ first and see if there are any other denominators that could have 35 as a common multiple. $1/5 = 7/35$.
 $22/35 + 7/35 = 29/35$.

Then we need to see whether the remaining fractions total $1/5$ or $22/35$.

We can change $1/5$ into $5/25$ and therefore $3/25 + 2/25 = 1/5$.



TASK

As this is Year 6 revision, to ensure you are prepared for Year 7, try your best to complete all of the questions!

Week 8_Maths_Lesson 3


Lesson 3

Thursday 25th June 2020

I am learning to answer reasoning and problem solving arithmetic fraction questions.

Try your best to answer as many questions as you can. 😊

Reasoning Questions

Key vocabulary:	Your answer
<p>Jack is calculating $4\frac{2}{7} - 2\frac{6}{7}$ He adds $\frac{1}{7}$ to both numbers.</p> <p> $4\frac{2}{7} - 2\frac{6}{7} = 4\frac{3}{7} - 3$ so the answer is $1\frac{3}{7}$</p> <p>Explain why Jack is correct.</p>	
<p>Eva and Amir both work on a homework project.</p>	

Home Learning

Once you have finished turn this assignment in on Google Classroom.



School Work

Once you have finished this assignment you will go through the answers as a class.

Self Mark