

a)
Each day, Eve records how long it takes her to complete a puzzle.

On Friday, she took 50% less time than on Thursday.
On Saturday, she took 20% less time than on Friday.
On Saturday, she takes 36 minutes to complete the puzzle.

How many minutes did she take to complete the puzzle on Thursday?

As a percentage of Friday's time, what is Saturday's time?	$100\% - 20\% = 80\%$
What is this percentage equivalent to?	$80\% = 36 \text{ minutes}$
How long did she take on Friday?	$80\% = 36 \text{ minutes}$ $10\% = \frac{36}{8} = 4.5 \text{ minutes}$ $100\% = 4.5 \text{ minutes} \times 10$ $4.5 \text{ minutes} \times 10 = 45 \text{ minutes}$
As a percentage of Thursday's time, what is Friday's time?	$100\% - 50\% = 50\%$
What is this percentage equivalent to?	$50\% = 45 \text{ minutes}$
How long did she take on Thursday?	$50\% = 45 \text{ minutes}$ $100\% = 45 \text{ minutes} \times 2$ $45 \text{ minutes} \times 2 = 90 \text{ minutes}$

b)
Each day, Sam records how long it takes them to complete a puzzle.

On Friday, they took 20% less time than on Thursday.
On Saturday, they took 50% less time than on Friday.
On Saturday, they take 24 minutes to complete the puzzle.

How many minutes did they take to complete the puzzle on Thursday?

As a percentage of Friday's time, what is Saturday's time?	$100\% - 50\% = 50\%$
What is this percentage equivalent to?	$50\% = 24 \text{ minutes}$
How long did they take on Friday?	$50\% = 24 \text{ minutes}$ $100\% = 24 \text{ minutes} \times 2$ $24 \text{ minutes} \times 2 = 48 \text{ minutes}$
As a percentage of Thursday's time, what is Friday's time?	$100\% - 20\% = 80\%$
What is this percentage equivalent to?	$80\% = 48 \text{ minutes}$
How long did they take on Thursday?	

c)
Each day, Ash records how long it takes them to complete a puzzle.

On Monday, they took 30% less time than on Sunday.
On Tuesday, they took 20% less time than on Monday.
On Tuesday, they take 44.8 minutes to complete the puzzle.

How many minutes did they take to complete the puzzle on Sunday?

As a percentage of Monday's time, what is Tuesday's time?	$100\% - 20\% = 80\%$
What is this percentage equivalent to?	$80\% = 44.8 \text{ minutes}$
How long did they take on Monday?	
As a percentage of Sunday's time, what is Monday's time?	
What is this percentage equivalent to?	
How long did they take on Sunday?	

d)
Each day, Charlie records how long it takes them to complete a puzzle.

On Wednesday, they took 25% less time than on Tuesday.
On Thursday, they took 40% less time than on Wednesday.
On Thursday, they takes 18 minutes to complete the puzzle.

How many minutes did they take to complete the puzzle on Tuesday?