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A-SSE Delivery Trucks . A company uses two different-sized trucks to deliver sand. The first truck can transport x cubic yards, and the second y cubic yards. The first truck makes S trips to a job site, while the second makes T trips. What do the following expressions represent in practical terms?

a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

TRUCK 1

let x = # of items in cubic yards transported by Truck 1

S = # of trips made by Truck 1

TRUCK 2

Let y = # of items in cubic yards transported by Truck 2

T = # of trips made by Truck 2

a.) $S+T$ → This expression represents the sum or the combined number of trips made by both the first and second trucks.

b.) $x+y$ → This expression represents the sum or the combined number of items in cubic yards made by both the first and second trucks.

c.) $xS+yT$ → This expression represents the total number of items in cubic yards transported by both Trucks in terms of the number of trips made by each truck. (quantity transported)

d.) $\frac{xS+yT}{S+T}$ → This expression represents the ratio between the total number of items in cubic yards in terms of the number of trips made to the combined number of trips of both trucks.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a. The total number of trips made by the first and ~~second~~ second truck. to deliver sand.

b. The total number of cubic yards delivered by one trip of ~~the~~ first & second truck. of sand

c. The total amount of sand delivered in cubic yards by the first and second truck based on the # of trips made.

d. The average amount of sand delivered in each trip.

b. The amount of sand delivered in one trip by the first and second truck.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

x represents the amount of cubic yards truck A takes

S represents the # of trips truck A takes

y represents the amount of cubic yards truck B takes

T represents the # of trips taken by truck B.

A.) $S+T$ represents the total # of trips taken by both trucks A and B.

b.) $x+y$ represents the total amount of cubic yards of sand that was delivered by the combined trucks A & B capacity.

c.) $xS+yT$ represents the total amount of sand in cubic yards that is delivered by S trips and T trips.

d.) $\frac{xS+yT}{S+T}$ represents the average amount of sand in cubic yards delivered by either truck A or B.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

A. $S+T$

$S+T$ represents the total number of trips that the two trucks make to the site combined.

B. $x+y$

$x+y$ represents the total cubic ~~feet~~ yards of sand transported per time that the trucks make deliveries.

C. $xS+yT$

$xS+yT$ represents the total cubic feet of sand transported by both trucks after they have completed all of their respective trips.

D. $\frac{xS+yT}{S+T}$ represents the total average number of cubic feet delivered per load (regardless of the two different specifications of the two trucks)

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a) The sum of the number of trips made by the two trucks. If $S=4$ and $T=5$, therefore there 9 trips made by the two trucks in a period of time.

b) $x+y$:

The sum of cubic yards of sand that were transported by the two trucks.

Say $x = 150\ yd^3$ and $y = 200\ yd^3$. So $x+y = 150\ yd^3 + 200\ yd^3 = 350\ yd^3$

c.) $xS+yT$

The sum of the product made by the two trucks, their trips and their payload.

Say: $x = 150\ yd^3$; $y = 200\ yd^3$

$S = 4$ $T = 5$

So: $xS + yT$

$(150\ yd^3)(4) + (200\ yd^3)(5)$

$= 600\ yd^3 + 1000\ yd^3$

$= 1,600\ yd^3$

d) $\frac{xS+yT}{S+T}$

d) The ratio of the product made by the two trucks, their trips and their payload by the sum of the trips of the two trucks.

Say: $x = 150\ yd^3$; $y = 200\ yd^3$

$S = 4$ $T = 5$

So: $\frac{xS+yT}{S+T}$

$= \frac{(150\ yd^3)(4)+(200\ yd^3)(5)}{4+5} = \frac{600+1000}{9} = \frac{1600}{9} = 177.78\ yd^3$

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

First truck → x yds^3 → S trips
Second truck → y yds^3 → T trips

a.) S+T expresses the total amount of trips both trucks make to the job site. S trips + T trips, S+T.

b.) x+y expresses the amount of sand in cubic yards that both trucks combined can carry. X cubic yards + y cubic yards, x+y

c.) xS + yT expresses the total amount of sand that was carried to the job site by both trucks.
First truck → carries x cubic yards • S trips
+
Second truck → carries y cubic yards • T trips → xS+yT

d.) $\frac{xS+yT}{S+T}$ expresses the total amount of sand delivered to the job site divided by the total number of trips both trucks took. This will give you the average amount of sand that was carried to the job site each trip.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a. $S + T$ refers to the sum of trips of the two delivery trucks. In other words, the total trips that the two trucks can make.

b. $x + y$

If x is the no. of cubic yards that the 1st truck can deliver and y is the no. of cubic yards that the 2nd truck can deliver, then $x + y$ is the sum of number of yards that the two trucks can transport.

c. $xS + yT$

This is the total trips made by the two trucks with the first truck transporting x cubic yards and the second truck transporting y cubic yards.

d. $\dfrac{xS + yT}{S + T}$

This refers to the ratio of the total trips made by the two trucks, with the first truck transporting x cubic yards and the second truck transporting y cubic yards and the sum of the trips of the two trucks.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

(a) The expression $S+T$ represents the total trips the two different trucks made to the job site.

(b) The expression $x+y$ represents the total cubic yards of sand both trucks can deliver in one trip.

(c) The expression $xS+yT$ represents the total sand delivered to a job site after S and T trips.

(d) The expression $\frac{xS+yT}{S+T}$ represents the average cubic yards of sand delivered per trip to the job site.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a. $S+T$ represents the total number of trips made to the job site by both trucks combined.

b. $x+y$ represents the combined (single) load in cubic yards of both trucks for a single trip.

c. $xS+yT$ represents the total number of cubic yards of sand delivered by both trucks in the course of all trips.

d. $\frac{xS+yT}{S+T}$ represents the average number of cubic yards transported in a single trip by the two trucks combined.

For each of the above, I used the variable definitions provided in the problem. That is, S & T refer to the number of trips each of two trucks makes and x & y refer to the number of cubic yards of sand delivered by each truck.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a) Total number of trips made by both trucks to their respective job sites.

b) Total amount in cubic yards that can be transported by both trucks in one trip.

c) Total amount of a volume transported to job sites by the two trucks.

d) The average amount of a volume transported by the two trucks per trip.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

If S represents the number of trips the first truck makes, and T represents the number of trips the second truck makes, then S+T represents the number of trips the first truck and the second make altogether when combined.

If x represents the cubic yards the first truck transports, and y represents the amount of cubic yards the second truck transports, x+y represents the amount of cubic yards the trucks can deliver together for one transport.

To find the total amount transported by both trucks altogether, you would use the expression $xS+yT$. You are multiplying the amount of cubic yards by the number of trips for both trucks and adding them together.

The expression $\frac{xS+yT}{S+T}$ is dividing the total transported amount by the total number of trips, so this will give you the average amount transported per trip.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

S+T

a) Represents the # of trips total. The number of trips the first truck makes and the number of trips the second truck makes.

x+y

b.) Represents the total amount of cubic yards that the 2 trucks can transport at one time.

xS+yT

c) Represents the total amount of sand delivered.

$x = 2y^3$ $y = 3y^3$ $S = 6$ $T = 4$

$= 2(6) + (3)(4)$ = 24 cubic yards transported.

2 cubic yards, 6 times

3 cubic yards 4 times

$\frac{xS+yT}{S+T}$

d) Using the same numbers as above: $\frac{24}{6+4} = \frac{24}{10} = \frac{12}{5}$

Average amount of sand transported.

24 cubic yards of sand transported over 10 trips.

12 " " 5 "

Can also be viewed as a Ratio: $\frac{\text{Total Amount of Sand Delivered}}{\text{Total trips}}$

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a. The total number of trips both dump trucks make. (A)

b. Total number of cubic yards the dumptrucks travel. (B)

c. sum of the cubicyards times # of trips for both dump trucks (C)

d. sum of the cubic yards times the number of trips divided by the sum of the # number of trips both D.T. make (D)

$$\frac{C}{A}$$

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

The best expressions that represents in practical terms is C. $xS+yT$.

In solving the total number of cubic yards that was delivered is to multiply the # of cubic yards and the number of trips of each truck then add them up together to get the total.

Ex. Let $x = 10$ yards^3 $y = 9$ yards^3
$S = 3$ trips $T = 2$ trips

In solving the total cubic yards that delivered is to the sum of the product of xS and yT. We can solve for the total # of trips and total cubic yards if the

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a. $S+T$ represents the total # of each trucks trips.

b. $x+y$ represents the total # of cubic yards that is delivered.

c) $\frac{xS+yT}{S+T}$ This represents the average cubic yards that is delivered per trip.

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

a) $S+T$ S = #of trips the first truck takes T = #of trips the second takes
so $S+T$ = the total #of trips both trucks took

b) $x+y$ x = cubic yards that the 1st truck can hold or carry
y = cubic yards that the 2nd truck can hold or carry
$x+y$ = the total amount of cubic yards that could be transported by both trucks

c) $xS+yT$ xS = the amount of cubic yards carried times the number of trips of truck1
yT = the amount of cubic yards carried times the number of trips of truck2
$xS+yT$ = the total amount of cubic yards carried by both trucks

d) using a and c then $\frac{xS+yT}{S+T}$ = the total amount of cubic yards carried by both trucks divided by the total # of trips both trucks take,
i.e. this is the average load per trip for both trucks

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

t_1 = 1st truck

t_2 = 2nd truck

x = max # of cubic yards ~~traveled~~ transported by t_1

y = max # of cubic yards ~~traveled~~ transported by t_2

S = # of trips to jobsite by t_1

T = # of trips to jobsite by t_2

d.) cont.

$\frac{xS+yT}{S+T}$ = total # of cubic yards which can be transported in one trip

a.) $S+T$ = total # of trips to jobsite made by t_1 & t_2.

b.) $x+y$ = max # of cubic yards that can be transported using both t_1 & t_2 in one trip

c.) $xS+yT$ = total # of cubic yards that can be transported using both trucks

xS = total # of cubic yards that can be transported by t_1

yT = total # of cubic yards that can be transported by t_2

d.) $\frac{xS+yT}{S+T}$ = $\frac{\text{total \# of cubic yards that can be transported by both trucks}}{\text{total \# of trips which are made by both trucks}}$

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a. $S+T$ b. $x+y$ c. $xS+yT$ d. $\frac{xS+yT}{S+T}$

1st truck x yd^3 sand; S trips to job site
2nd truck y yd^3 sand; T trips to job site

$\frac{xS+yT}{S+T}$

a) S+T is the number of trips both trucks made to the job site.

b) x+y is The amount of sand, in yd^3, that both trucks can make in one trip.

c) xS gives us how much sand (yd^3) Truck 1 delivers to job sites. yT gives us how much sand (yd^3) truck 2 delivers totally. so (C) gives us how much sand was delivered to the job site.

d) $\frac{xS+yT}{S+T}$ gives us the total amount of sand divided by the number of trips. This would be the average amount of sand delivered in yd^3 per trip.