# What is the ratio of the total number. 


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## MODEL QUESTIONS

Directions (Q. No. 1-5): These questions are based on the figure given below. The diagram describes the percentage break-up of the total expenditure of each of five persons $P, Q, R, S$ and $T$.


Others

1. If the incomes of $\mathrm{P}, \mathrm{Q}, \mathrm{R}, \mathrm{S}, \mathrm{T}$ are Rs. 20,000 , Rs. 16,000 , Rs. 18,000 , Rs. 22,000 and Rs. 24,000 respectively and they spend all their incomes, then who spends the maximum percentage of his income on house hold expenditures?
a) $P \quad$ b) $Q$
c) $R \quad$ d) $S$
e) None of these
2. Considering the data given in the above question, who spends the

## Key with Solutions

|  | Household Exp | Education | Others |
| :---: | :---: | :---: | :---: |
| P | $50 \%$ | $25 \%$ | $25 \%$ |
| Q | $25 \%$ | $25 \%$ | $50 \%$ |
| R | $25 \%$ | $37.5 \%$ | $37.5 \%$ |
| S | $37.5 \%$ | $50 \%$ | $12.5 \%$ |
| T | $12.5 \%$ | $50 \%$ | $37.5 \%$ |

1. By observing the above table, we can say that $P$ spends the maximum percentage of his income on household expenditure.
2. By observing the above table, we can say that $Q$ spends the minimum percentage of his income on education.

Ans: b
3. R spends equal amounts on education and others.

Ans: d
4. Let the incomes of each of R and T be Rs. 100
R's expenditure on others
= Rs. 37.5
T's expenditure on education
= Rs. 50
$\therefore$ Required \%
$=\frac{(50-37.5)}{50} \times 100=25 \%$
minimum amount on education?
a) J
b) Q
c) $R$
d) S
e) Cannot be determined
3. If the incomes of all of them are equal then which of the following is true?
a) $Q$ spends the maximum amount on household expenses
b) $P$ spends equal amount on household expenses and on "others".
c) $S$ spends the maximum amount of his income on household expenses
d) $R$ spends an equal amount on education and on "others"
e) None of these
4. If the incomes of $R$ and $T$ are equal, then R's expenditure on 'others' is what percentage more/ less than T's expenditure on education? $\begin{array}{ll}\text { a) } 20 \% & \text { b) } 25 \%\end{array}$
c) $10 \%$
d) Cannot be determined
e) None of these
5. For how many of the given persons is the expenditure on 'other' $50 \%$ or more of their total expenditure?
a) 1
b) 2
c) 3
d) 4
e) None of these

Directions (Q.No. 6-10): These questions are based on the followin$g$ line graph which shows the performance of students of six schools $P, Q, R, S, T$ and $U$ in a board exam.
5. Only Q spends $50 \%$ of his income on others. Ans: a
6. The percentage of students who passed without distinction. In $\mathrm{P}=\frac{200}{1000} \times 100=20 \%$
In $\mathrm{R}=\frac{600}{1500} \times 100=40 \%$
In $\mathrm{S}=\frac{450}{1000} \times 100=45 \%$
In $U=\frac{750}{1500} \times 100=50 \%$
Ans: a
7. By observation we can say that in schools P, Q and R the pass percentage is less than $80 \%$. In schools $\mathrm{S}, \mathrm{T}$ and U :
$\mathrm{S} \rightarrow 800=80 \%$ of 1000
$\mathrm{T} \rightarrow 1250>80 \%$ of 1300 and $\mathrm{U} \rightarrow 1250>80 \%$ of 1500 $\therefore$ In $\mathrm{S}, \mathrm{T}$ and U the pass percent is atleast $80 \%$.

Ans: $c$
8. The ratio of the number of students passing with distinction to those failing
$\operatorname{In} \mathrm{Q}=\frac{400}{650}=\frac{8}{13}=0.61$
In $\mathrm{R}=\frac{400}{500}=\frac{4}{5}=0.8$
In $\mathrm{P}=\frac{300}{500}=\frac{3}{5}=0.6$

BANK

## POs, Clerks

## Quantitative Special Aptitude


6. In which of the following schools is the percentage of students passing without a distinction, the least?
a) $P$
b) R
c) S
d) U
e) None of these
7. In how many schools is the pass percentage at least 80 ?
$\begin{array}{lll}\text { a) } 1 & \text { b) } 2 & \text { c) } 3\end{array}$
d) 4 e) None of these
8. In which of the following schools is the ratio of the number of students passing with distinction to those failing, the least?
$\begin{array}{llll}\text { a) } Q & \text { b) } R & \text { c) } P & \text { d) } T\end{array}$ e) None of these
9. Considering all the six schools, what percent of the students have

In $\mathrm{T}=\frac{600}{50}>1$
$\therefore \frac{3}{5}$ is the least among the given values.

Ans: $c$
9. The overall pass percent with distinction
$\frac{300+400+400+350+600+500}{1000+100}$
$1000+1400+1500+1000+$
$1300+1500$
$=\frac{2550}{7700} \times 100=33.1 \%$
Ans: a
10. Total no. of students who failed $=500+650+500+200+50+$ $250=2150$
Total no. of students total passed $=500+750+1000+800+$ $1250+1250=5550$
Required ratio $=\frac{2150}{5550}=\frac{43}{111}$
Ans: $c$
11. Let the number of men be $x$.

We have $\mathrm{M}_{1} \mathrm{D}_{1} \mathrm{H}_{1}=\mathrm{M}_{2} \mathrm{D}_{2} \mathrm{H}_{2}$
$x \times 18 \times 8=\frac{4 x}{3} \times \mathrm{D}_{2} \times 4 \Rightarrow \mathrm{D}_{2}=27$
Ans: b
12. Let us say the first pipe should be closed after $x$ minutes. Then,

$$
\begin{aligned}
& \frac{x}{18}+\frac{16}{24}=1 \\
& \Rightarrow \frac{x}{18}+\frac{2}{3}=1 \Rightarrow \frac{x}{18}=\frac{1}{3} \Rightarrow x=6
\end{aligned}
$$

passed with distinction?
$\begin{array}{lll}\text { a) } 33.1 \% & \text { b) } 33.8 \% & \text { c) } 34.2 \%\end{array}$ $\begin{array}{ll}\text { d) } 35.6 \% & \text { e) None of these }\end{array}$
10. What is the ratio of the total number of students who failed to those who passed, in all the six schools together?
a) $43: 121$
$\begin{array}{ll}\text { b) } 21: 37 & \text { c) } 43: 111\end{array}$
d) $21: 38$
e) None of these
11. A certain number of men working 8 hours per day can do a piece of work in 18 days. If the number of men is increased by
$1 / 3$ and the time spent per day is decreased by half, in how many days will the same work will be completed?
a) 24
b) 27
c) 30
$\begin{array}{ll}\text { d) } 33 & \text { e) None of these }\end{array}$
12. Two pipes can fill a tank in 18 minutes and 24 minutes respectively. Both are opened simultaneously. After how many minutes should the first pipe be closed so that the tank becomes full in 16 minutes?
$\begin{array}{ll}\text { a) } 6 & \text { b) } 7\end{array}$
$\begin{array}{ll}\text { c) } 8 & \text { d) } 9\end{array}$
e) 5
3. Rama covers the distance from $A$ and $B$ at a uniform speed of 80 kmph and the distance from B to C at a uniform speed of 120 kmph . What is the average speed for the entire journey if the ratio of the distances AB and BC is $2: 3$ ?
$\begin{array}{ll}\text { a) } 87 \mathrm{~km} / \mathrm{hr} & \text { b) } 105 \mathrm{~km} / \mathrm{hr} \text {. }\end{array}$ $\begin{array}{ll}\text { c) } 90 \mathrm{~km} / \mathrm{hr} & \text { d) } 100 \mathrm{~km} / \mathrm{hr}\end{array}$ e) None of these

The first pipe should be closed after 6 minutes.

Ans: a
13. $\mathrm{S}_{\mathrm{A} \rightarrow \mathrm{B}}=80 \mathrm{~km} / \mathrm{hr}$
$\mathrm{S}_{\mathrm{B}-\mathrm{C}}=120 \mathrm{~km} / \mathrm{hr}$
$\mathrm{AB}: \mathrm{BC}=2: 3$
$\mathrm{d}_{\mathrm{AB}}=2 x ; \mathrm{d}_{\mathrm{BC}}=3 x$
$\mathrm{t}_{\mathrm{AB}}=2 x / 80=x / 40$
$\mathrm{t}_{\mathrm{BC}}=3 x / 120=x / 40$
Average speed
$=\frac{5 x}{\frac{x}{40}+\frac{x}{40}}=100 \mathrm{~km} / \mathrm{hr}$
Ans: d
14. Since Abhishek sells at cost price, we can ignore the price. He makes $25 \%$ profit, so he must be increasing the volume of the milk by $25 \%$ such that he will get $25 \%$ more. So he must be adding $25 / 100$ liters of water to every liter of milk. He is adding 0.25 ltr. of water to every liter of milk before selling it.

Ans: d
15. Let the first part (A) be 100a
$\therefore$ The second part (B) is
100(100-a)
SI on $\mathrm{A}=12 \mathrm{a}$
SI on $B=17(100-a)$
SI on $\mathrm{A}+\mathrm{B}=1700-5 \mathrm{a}$
SI on $3 \mathrm{~A}=36 \mathrm{a}$
SI on $2 \mathrm{~B}=34(100-\mathrm{a})$
14. Abhishek bought milk at Rs. 20 per liter. He mixed it with water and then sold the mixture at his cost price and made a profit of $25 \%$. Find the quantity of water mixed with each liter of milk?
$\begin{array}{lll}\text { a) } 0.30 & \text { b) } 0.15 & \text { c) } 0.20\end{array}$
$\begin{array}{ll}\text { d) } 0.25 & \text { e) None of these }\end{array}$
15. Rs. 10,000 is split into two parts. The first part is lent at $12 \%$ p.a. simple interest and the second part is lent at $17 \%$ p.a. simple interest. If the first part is tripled and the second part is doubled the total simple interest from these two parts would increase by Rs. 1980. Find the first part (in Rs.).
a) 7000
b) 6000
$\begin{array}{ll}\text { c) } 4000 & \text { d) } 3000\end{array}$
e) None of these

Directions(Q.No. 16-20): What approximate value will come in place of the "question Mark"(?) mark in the following questions.
16. $(47 \%$ of $1442-36 \%$ of 1412$) \div$ $63=$ ?
a) 4
b) 5
c) 3 d) 6
e) 1
17. $(\sqrt{7921-\sqrt{2070.25})}$
$\begin{array}{ll}\text { a) } 11 & \text { b) } 14\end{array}$
c) $15 \quad$ d) 9
e) 13
18. $(341789+265108) \div(8936-3578)=$ ? $\begin{array}{ll}\text { a) } 150 & \text { b) } 113\end{array}$
$\begin{array}{ll}\text { c) } 135 & \text { d) } 100\end{array}$
e) 125
19. $29 \%$ of $725=60 \%$ of $315+$ ?

| a) 28 | b) 30 | c) 15 |
| :--- | :--- | :--- |

d) $18 \quad$ e) 21
20. $1595 \div 25 \times 36.5=$ ?
$\begin{array}{ll}\text { a) } 2459 & \text { b) } 2329\end{array}$
c) 2359
d) $2429 \quad$ e) 2349
$=3400-34 \mathrm{a}$
SI on $3 \mathrm{~A}+2 \mathrm{~B}=3400+2 \mathrm{a}$
Given $(1700-5 a)+1980$
$=3400+2 \mathrm{a}$
$\therefore 280=7 a \Rightarrow a=40$
$\therefore$ The first part is 4000 .
Ans: c
16. ? $=\left(1442 \times \frac{47}{100}-\frac{1412 \times 36}{100}\right) \div 63$
$=(677.74-508.32) \div 63$
$=\frac{169.42}{63}=2.69 \approx 3$
Ans: $c$
17. ? $=(\sqrt{7921}-\sqrt{2070.25}) \times \frac{1}{4}$
$=(89-45.5) \times 1 / 4$
$=\frac{43.5}{4}=10.875 \approx 11$
Ans: a
18. $?=(341789+265108) \div(8936$ - 3578)
$=606897 \div 5358=113.27 \approx 113$
Ans: b
19. $\frac{725 \times 29}{100}=\frac{315 \times 60}{100}+$ ?
$\Rightarrow 210.25=189+$ ?
$\Rightarrow$ ? $=210.25-189$
$\Rightarrow 21.25 \approx 21$
Ans: $e$
20. ? $=1595 \div 25 \times 36.5$
$=\frac{1595}{25} \times 36.5=2328.7 \approx 2329$
Ans: b

