

**JUYING SECONDARY SCHOOL
MATHEMATICS DEPARTMENT**

Sec 1 G3 WA3 Revision
(Questions from 2020 JYSS EOY Papers)

Class:	Name: ()	Date:
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Paper 1

3. (a) Simplify $1.5 : \frac{5}{8}$.

Answer : [1]

(b) Given that $2^2 : 3^2 = 100 : 75a$, find the value of a .

Answer $a =$ [2]

4. Zhan Feng orders a set meal at a restaurant which offers a 25% discount. The original price of the set meal is \$12.80.

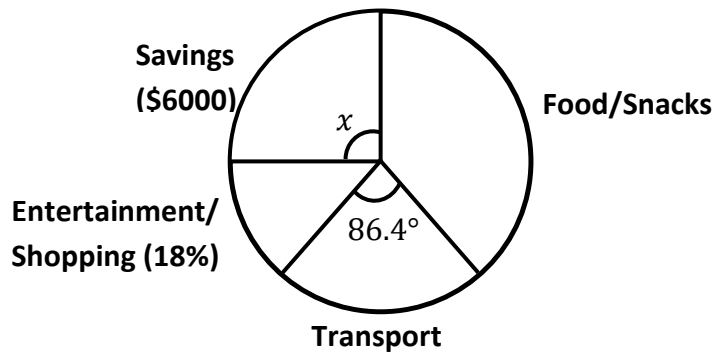
(a) Calculate the discounted price of the set meal.

Answer \$..... [1]

(b) Given that there is a service charge of 10% and the prevailing GST is 7%, calculate Zhan Feng's total bill after the discount.

Answer \$..... [2]

10. (a) Shafiq's annual spending in 2019 is represented in a pie chart.



Given that Shafiq saved 25% of his money in 2019,

- (i) find the value of angle x .

Answer $^\circ$ [1]

- (ii) find the amount of money he spent on entertainment/shopping in 2019.

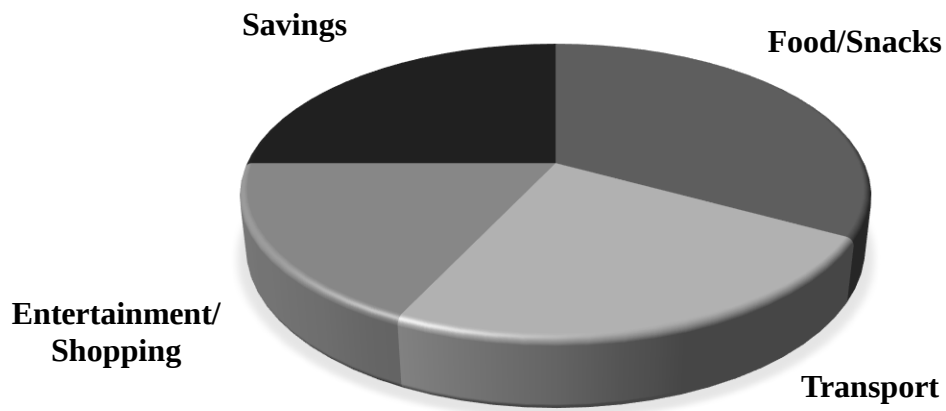
Answer \$ [2]

- (iii) find the percentage of money Shafiq spent on food/snacks in 2019.

Answer% [2]

10. Shafiq's annual spending in 2019 can also be represented using a 3D pie chart.

SHAFIQ'S SPENDING IN 2019 (\$)



- (b) Explain how the pie chart above can be misleading.

Answer The pie chart above can be misleading because
.....
.....
.....

[1]

Paper 2

3. A 4-room HDB flat in Singapore in the 1980s has an average floor area of 105 m^2 . The average floor area of a 4-room HDB flat in Singapore in the 2000s is 90 m^2 .

Find the percentage decrease in the average floor area of a 4-room HDB flat from the 1980s to 2000s.

Answer% [2]

8. Ready-made lime juice is sold in bottles of 500 *ml* in the supermarket. The ratio of lime juice concentrate to water is 2 : 3.

Sally bought a bottle of ready-made lime juice and she wanted to change the ratio of lime juice concentrate to water to 1 : 3.

- (a) Sally commented that since she needed to halve the amount of lime juice concentrate, she could add another 500 *ml* of water to what she has bought.

Calculate the effect of adding 500 *ml* of water to the bottle of ready-made lime juice. Explain with clear working on whether she would get the ratio of 1 : 3.

Answer Adding 500 *ml* of water would / would not change the ratio to 1 : 3.

.....

..... [3]

.....

- (b) Hence or otherwise, calculate the amount of water that was needed to add to 1 bottle of ready-made lime juice to change the ratio of lime juice concentrate to water to 1 : 3.

Answerml [2]

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10. Nurul cycles from point A to point B on her bicycle at 7 m/s.

- (a) Express Nurul's cycling speed in km/h.

Answerkm/h [2]

- (b) **At the same time**, Ben jogs from point B to point A with an average speed of 6 km/h. x minutes later, Nurul and Ben meet each other.

- (i) Express x minutes in hours.

Answerh [1]

- (ii) Write an expression, in terms of x , for the distance travelled by Ben.

- Answerkm [1]
- (iii) Given that Nurul and Ben travel a total distance of 36.4 km, form an equation in terms of x and find the time taken, in minutes, for them to meet each other.

Answerminutes [2]

Suggested Working

Paper 1

3. (a)

$$\begin{aligned} 1.5 : \frac{5}{8} &= \frac{3}{2} : \frac{5}{8} \\ &= \frac{12}{8} : \frac{5}{8} \\ &= 12 : 5 \end{aligned}$$

(b)

$$\begin{aligned} 2^2 : 3^2 &= 100 : 75a \\ 4 : 9 &= 100 : 75a \\ 100 : 225 &= 100 : 75a \\ \therefore 75a &= 225 \end{aligned}$$

$$a = 3$$

4. (a) Discounted Price = $\frac{75}{100} \times \$12.80$
 $= \$9.60$
- (b) Price w service charge = $110\% \times \$9.60$
 $= \$10.56$
- Price w svc and GST = $107\% \times \$10.56$
 $= \$11.2992$
 $= \$11.30$ (to nearest cent)

10. (a) (i) 90°
- (ii) $25\% \square \$6000$
 $18\% \square \frac{18}{25} \times \6000
 $= \$4320$
- (iii) Percentage on transport
 $= \frac{86.4}{360} \times 100\%$
 $= 24\%$
- Percentage on food/snacks
 $= 100\% - 25\% - 18\% - 24\%$
 $= 33\%$
- (b) The pie chart above can be misleading because the 3D pie chart gives the wrong impression that the spending on transport is higher than it actually is (as the area of the pie chart is mistakenly taken into account instead of comparing only the angles in a pie chart).

Paper 2

3. Percentage decrease = $\frac{105-90}{105} \times 100\%$

$$= 14\frac{2}{7}\% \text{ or } 14.3\% \text{ (to 3 s.f.)}$$

8. (a) Amount of lime juice concentrate

$$= \frac{2}{5} \times 500 \text{ ml}$$

$$= 200 \text{ ml}$$

Amount of water

$$= \frac{3}{5} \times 500 \text{ ml} + 500 \text{ ml}$$

$$= 800 \text{ ml}$$

Ratio of lime juice concentrate to water

$$= 200 : 800$$

$$= 1 : 4$$

Adding 500 ml of water **would not change** the ratio to 1 : 3. The ratio will become 1 : 4 instead.

- (b) Amount of lime juice concentrate = 200 ml

$$\text{Amount of water} = \frac{3}{5} \times 500 \text{ ml}$$

$$= 300 \text{ ml}$$

$$1 \text{ unit} \square 200 \text{ ml}$$

$$3 \text{ units} \square 600 \text{ ml}$$

$$\text{Amount of water to be added} = 600 - 300$$

$$= 300 \text{ ml}$$

10. (a) $7 \text{ m/s} = \frac{7 \text{ m}}{1 \text{ s}}$

$$= \frac{7 \div 1000 \text{ km}}{1 \div 3600 \text{ h}}$$

$$= 25.2 \text{ km/h}$$

- (b) (i) $\frac{x}{60} \text{ h}$

- (ii) Distance travelled by Ben

$$= 6 \times \frac{x}{60}$$

$$= \frac{x}{10} \text{ km}$$

- (iii) $\frac{x}{10} + 25.2 \left(\frac{x}{60} \right) = 36.4$

$$\frac{13x}{25} = 36.4$$

$$x = 70 \text{ minutes}$$