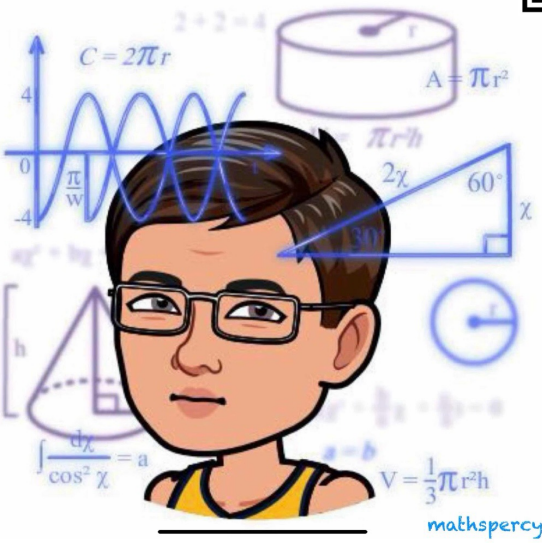

S1

Past Exam Paper (1314–2223)

Question Book

Ch5 Numerical Estimation

UCCKE F1 Ch5 Numerical Estimation

Ch5 Numerical Estimation

[1314 S.1 1st Exam MC Q7]

1. To estimate the value of the expression

$$380+398+408+411+421,$$

the method of clustered value is used. Which of the following is the correct use of the method of clustered value?

A. $380+398+408+411+421 \approx 380+400+410+410+420$
$= \underline{\underline{2020}}$

B. $380+398+408+411+421 \approx 400\times 5$
$= \underline{\underline{2000}}$

C. $380+398+408+411+421 \approx 420\times 5$
$= \underline{\underline{2100}}$

D. $380+398+408+411+421 \approx 380\times 5$
$= \underline{\underline{1900}}$

[1314 S.1 1st Exam MC Q8]

2. Which of the following statements about π are true?

I. $\pi = 3.14$

II. $\pi \approx \frac{22}{7}$

III. An ancient Chinese mathematician used the method of *ge yuan shu* (割圓術) to find the approximate value of π.

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

[1718 S.1 3rd Exam MC Q3]

3. Use a clustered value to estimate the sum of 5982, 6021, 6034 and 5896.

A. 23 900
B. 23 933
C. 24 000
D. 25 000

[1819 S.1 3rd Exam MC Q4]

4. Daniel makes the following estimation.

$$41 + 39 + 38 + 42 + 37 \approx 200$$

Which of the following estimated methods does he use?

A. Rounding up
B. Rounding down
C. Rearranging the order of operations
D. Using a clustered value

[1819 S.1 3rd Exam BQ Q22]

5. Estimate the value of $0.91 - 1.25 + 6.09$ by

(a) rounding up each number to the nearest integer,
(b) rounding down each number to 1 decimal place.

(4 marks)

[1920 S.1 Exam MC Q5]

6. In the following estimation:

$$\begin{aligned} 68.7 + 19.2 - 24.7 &\approx 69 + 20 - 25 \\ &= \underline{\underline{64}} \end{aligned}$$

Which estimation method is used?

A. Rounding up each number to the nearest integer
B. Rounding off each number to the nearest integer
C. Rounding up the result to the nearest integer
D. Rounding off the result to the nearest integer

[1920 S.1 Exam MC Q6]

7. In the following estimation:

$$30.1 \times 0.67 \approx 30 \times \frac{2}{3}$$
$$= \underline{\underline{20}}$$

Which estimation method is used?

A. Using a clustered value
B. Using compatible numbers
C. Rounding up
D. Rounding down

[1920 S.1 Exam BQ Q2]

8. Sam wants to buy the following electrical appliances at an electrical shop. (3 marks)

Electrical appliance	Camera	Cellphone	Toaster	Rice cooker	TV
Price ($)	5852	3325	983	1148	4288

Estimate the total amount that Sam needs to pay by

(a) rounding up the prices to the nearest hundred dollars,
(b) rounding down the prices to the nearest hundred dollars.

[2021 S.1 WSUT MC Q1]

9. A number is rounded off to 3 significant figures and the result is 0.0960. Which of the following may be the number before rounding off?

A. 0.095 73
B. 0.095 96
C. 0.096 08
D. 0.096 41

[2021 S.1 WSUT BQ Q11]

10. (a) Round up 89.38745 to the nearest integer. (1 mark)

    (b) Round down 89.38745 to 2 decimal places. (1 mark)

    (c) Round off 89.38745 to 4 significant figures. (1 mark)

[2021 S.1 WSUT IQ Q16]

11. Sally gets 5 part-time jobs this month. The income that Sally earns from the 5 jobs are \$3785, \$4908, \$2214, \$2365 and \$1982. It is given that the monthly rent of Sally's studio is \$15 000. Suggest a rounding method to check whether Sally can have enough money to pay for the rent with the total income she gained from the 5 part-time jobs. Explain your answer by showing working steps.
(2 marks)

[2021 S.1 Final Exam BQ Q3]

12. (a) Round up 5.7543 to 2 decimal places.

    (b) Round down 5.7543 to 2 significant figures.

[2021 S.1 Final Exam MC Q4]

13. The daily profits of a shop in the past seven days were \$12 093, \$13 234, \$14 132, \$15 606, \$14 756, \$12 860 and \$11 575. If the shop owner wants to estimate whether the total profit in the past seven days is more than \$90 000, the owner should

    A. round up each daily profit to the nearest \$1000.

    B. round up each daily profit to the nearest \$10 000.

    C. round down each daily profit to the nearest \$1000.

    D. round down each daily profit to the nearest \$10 000.

[2122 S.1 ASUT MC Q2]

14. 0.067 543 =

A. 0.07, *cor. to 1 sig. fig.*

B. 0.068, *cor. to 2 d.p.*

C. 0.067, *cor. to 2 sig. fig.*

D. 0.0670, *cor. to 3 sig. fig*

[2122 S.1 ASUT BQ Q11]

15. (a) Round up 5310 to the nearest hundred. (1 mark)

(b) Round down 130.557 to the nearest integer. (1 mark)

(c) Round off 390 256 to 4 significant figures. (1 mark)

[2122 S.1 ASUT IQ Q18]

16. The following table shows the unit prices of a box of milk, a pack of cheese, a bag of rice and a can of soft drink in a supermarket.

	Milk	**Cheese**	**Rice**	**Soft drink**
Unit price ($)	11.5	17.6	52.8	7.2

Michelle buys 3 boxes of milk, 3 packs of cheese, 1 bag of rice and 6 cans of soft drinks. By using an appropriate estimation, determine whether $250 is enough for her to buy all the above items. Show your workings.

(4 marks)

[2122 S.1 Final Exam BQ Q3]

17. (a) Round off 235.17 to 2 significant figures. (1 mark)

(b) Round down 235.17 to 1 decimal place. (1 mark)

[2122 S.1 Final Exam MC Q3]

18. 0.005 901 72 =

A. 0.005, cor. to 3 *sig. fig.*

B 0.005 9, cor. to 3 *sig. fig.*

C. 0.005 90, cor. to 3 *sig. fig.*

D. 0.005 901, cor. to 3 *sig. fig.*

[2223 S.1 ASUT MC Q2]

19. 0.005 913 =

A. 0.005, *cor. to 1 sig. fig.*
B. 0.0059, *cor. to 2 sig. fig.*
C. 0.006, *cor. to 3 sig. fig.*
D. 0.06, *cor. to 2 d.p.*

[2223 S.1 ASUT BQ Q14]

20. Estimate the value of 25.10 + 3.96 – 8.42 + 11.57 – 19.02 by rounding off each number to the nearest integer.

(2 marks)

[2223 S.1 ASUT IQ Q19]

21. Only Martin and Dennis played a game. The following table shows their scores in four rounds. It is given that the total score of the four rounds of a player which is higher than that of the other player will win the game.

Round	**1st**	**2nd**	**3rd**	**4th**
Martin' s score	2129	1017	1168	2034
Dennis' s score	1860	2319	1827	842

Someone claims that Dennis wins the game. Do you agree? Explain your answer with estimation strategies.

(4 marks)

[2223 S.1 Final Exam MC Q3]

22. By rounding down each number to the nearest ten, estimate the value of $764-89-457+624$.

A. 830
B. 840
C. 850
D. 860

[2223 S.1 Final Exam BQ Q1]

23. Express $\frac{23}{7}$ in decimal correct to

(a) 3 significant figures,
(b) 4 decimal places. (2 marks)