GHS Sorted Past Paper - MC
S1-08 Approximate Values and Numerical Estimation

1. [20 - 21 S1 Final Exam - 04] (81%)

4. 0.070349 =

A. 0.07, correct to 3 significant figures.
B. 0.0703, correct to 3 significant figures.
C. 0.07034, correct to 5 decimal places.
D. 0.0704, correct to 4 decimal places.

2. [20 - 21 S1 Standardized Test - 01] (71%)

1. How many significant numbers does 0.01080 have?
A. 2
B. 3
C. 4
D. 5

3. [20 - 21 S1 Standardized Test - 02] (80%)

2. 0.003456789 =
A. 0.0034 (cor. to 2 sig. fig).
B. 0.00346 (cor. to 3 d.p.).
C. 0.0034579+ (cor. to 3 sig. fig.).
D. 0.0035 (cor. to 4 d.p.).

4. [20 - 21 S1 Standardized Test - 05] (82%)

5. Estimate the value of $1637 \div 4396 \times 1762$ by rounding off each number to the nearest ten.

A. 65.6
B. 656
C. 660
D. 4100

5. [21 - 22 S1 Final Exam - 05] (81%)

5. 0.009456789 =

A. 0.0094 (correct to 4 decimal places).
B. 0.00945 (correct to 4 decimal places).
C. 0.00946 (correct to 5 significant figures).
D. 0.0094568 (correct to 5 significant figures).

6. [21 - 22 S1 Final Exam - 13] (46%)

13. If $0.74497 < x < 0.74517$, which of the following must be true?

A. $x = 0.8$ (correct to 1 significant figure).
B. $x = 0.74$ (correct to 2 significant figures).
C. $x = 0.745$ (correct to 3 significant figures).
D. $x = 0.7450$ (correct to 4 significant figures).

7. [22 - 23 S1 Final Exam - 06] (88%)

6. 0.123567 =

A. 0.12 (correct to 3 significant figures).
B. 0.12 (correct to 3 decimal places).
C. 0.123 (correct to 3 significant figures).
D. 0.124 (correct to 3 decimal places).

8. [22 - 23 S1 Mid-year Exam - 08] (92%)

8. Round off 205.8502 to the nearest integer.

A. 200
B. 205
C. 206
D. 210

9. [22 - 23 S1 Mid-year Exam - 09] (81%)

9. Estimate the value of $4025 \div 951 \times 2510$ by rounding off each number to the nearest hundred.

A. 0.0016
B. 1000
C. 10000
D. 12000

10. [22 - 23 S1 Mid-year Exam - 18] (33%)

18. If $366.27748 < x < 366.86324$, which of the following must be true?

A. $x = 360$ (correct to the nearest ten)
B. $x = 370$ (correct to 2 significant figures)
C. $x = 366$ (correct to the nearest integer)
D. $x = 366.8$ (correct to 1 decimal place)

11. [23 - 24 S1 Final Exam - 08] (57%)

8. If 133.049 is rounded off to the nearest tenth, it becomes

A. 130.
B. 133.
C. 133.0.
D. 133.1.

12. [23 - 24 S1 Final Exam - 17] (78%)

17. If $0.045\,38 < x < 0.045\,42$, which of the following is true?

A. $x = 0.04$ (correct to 1 significant figure)
B. $x = 0.04$ (correct to 1 decimal place)
C. $x = 0.045$ (correct to 3 significant figures)
D. $x = 0.045$ (correct to 3 decimal places)

13. [23 - 24 S1 Mid-year Exam - 08] (79%)

8. Round down 41.9569 to 2 decimal places.

A. 41.94
B. 41.95
C. 41.957
D. 41.96

14. [23 - 24 S1 Mid-year Exam - 11] (78%)

11. 0.001 133 681 3 =

A. 0.001 13 (correct to 6 decimal places).
B. 0.001 133 (correct to 6 decimal places).
C. 0.001 134 (correct to 6 significant figures).
D. 0.001 133 68 (correct to 6 significant figures).

15. [23 - 24 S1 Mid-year Exam - 20] (69%)

20. The following table shows the selling prices of some food and drink in a school tuck shop.

Item	Chocolate bar	Hot dog	Soft drink	Biscuit
Selling price	\$8.9 each	\$4.4 each	\$3.8 each	\$9.9 each

Betty wants to buy x hot dogs, y cans of soft drink and z packs of biscuits. In order to ensure she brings enough money, which of the following estimations should she adopt?

A. Total amount to be paid $\approx \$(4x+3y+9z)$
B. Total amount to be paid $\approx \$(4x+4y+10z)$
C. Total amount to be paid $\approx \$(5x+4y+10z)$
D. Total amount to be paid $\approx \$(9x+4y+10z)$

16. [24 - 25 S1 Final Exam - 08] (72%)

8. If $0.23567 < x < 0.23574$, which of the following is true?

A. $x = 0.23$ (cor. to 2 decimal places)
B. $x = 0.24$ (cor. to 3 significant figures)
C. $x = 0.236$ (cor. to 3 decimal places)
D. $x = 0.2356$ (cor. to 4 significant figures)

17. [24 - 25 S1 Mid-year Exam - 08] (98%)

8. 0.618039887 =

A. 0.61 (correct to 2 significant figures).

B. 0.618 (correct to 3 decimal places).

C. 0.618 (correct to 4 significant figures).

D. 0.61803 (correct to 5 decimal places).

18. [24 - 25 S1 Mid-year Exam - 09] (49%)

9. How many significant figures does 40.0340 have?

A. 3

B. 4

C. 5

D. 6

19. [20 - 21 S2 Final Exam - 04] (72%)

4. How many significant figures are there in 0.0135400?

A. 4

B. 5

C. 6

D. 7

20. [24 - 25 S1 Mid-year Exam - 19] (49%)

19. The following table shows the selling prices of some drinks in the theme park.

Item	Lemon Tea	Coke	Coffee
Selling Price (each can)	\$8.3	\$9.8	\$12.5

To celebrate for the New Year, customers spending more than a certain amount may get a free gift from the park. Karmen wants to buy x cans of Lemon Tea, y cans of Coke and z cans of Coffee. In order to ensure she receives the free gift, which of the following estimations should she adopt for the total amount she needs to pay?

A. Total amount to be paid $\approx \$(8x+9y+12z)$

B. Total amount to be paid $\approx \$(8x+10y+13z)$

C. Total amount to be paid $\approx \$(9x+10y+12z)$

D. Total amount to be paid $\approx \$(9x+10y+13z)$

21. [22 - 23 S4 Final Exam - 03] (91%)

3. If $x = 12.3$ (correct to 3 significant figures), find the range of values of x.

A. $12.2 \le x < 12.4$
B. $12.2 < x \le 12.4$
C. $12.25 \le x < 12.35$
D. $12.25 < x \le 12.35$

22. [20 - 21 S5 Final Exam - 16] (86%)

16. $\dfrac{1}{\pi^2+1} =$

A. 0.091 (correct to 2 significant figures).
B. 0.092 (correct to 3 decimal places).
C. 0.091 99 (correct to 4 significant figures).
D. 0.092 000 (correct to 5 decimal places).

23. [23 - 24 S5 Final Exam - 08] (50%)

8. It is given that x is a real number. If x is rounded up to 3 significant figures, then the result is 457. Find the range of values of x.

A. $456 < x \leq 457$
B. $456 \leq x < 457$
C. $456.5 \leq x < 457.5$
D. $456.5 < x \leq 457.5$

24. [24 - 25 S5 Final Exam - 03] (92%)

3. 0.020 250 609 =

A. 0.020 (correct to 2 decimal places) .

B. 0.020 2 (correct to 3 significant figures) .

C. 0.020 25 (correct to 4 decimal places) .

D. 0.020 251 (correct to 5 significant figures) .

25. [23 - 24 S6 Mock Exam - 05] (71%)

5. It is given that x is a real number. If x is rounded down to 3 significant figures, the result is 888. Find the range of values of x.

A. $887 < x \leq 888$
B. $887.5 \leq x < 888.5$
C. $887.5 < x \leq 888.5$
D. $888 \leq x < 889$

26. [24 - 25 S6 Mock Exam - 08] (96%)

8. 0.00572531 =

A. 0.006 (correct to 3 significant figures).

B. 0.00572 (correct to 3 significant figures).

C. 0.005725 (correct to 4 significant figures).

D. 0.0057253 (correct to 5 decimal places).

GHS Sorted Past Paper - Conventional Questions
S1-08 Approximate Values and Numerical Estimation

1. [20 - 21 S1 Final Exam - 02]

2. **(a)** Round up 702.1 to the nearest integer. **(1 mark)**

(b) Round down 128 to the nearest ten. **(1 mark)**

2. [20 - 21 S1 Standardized Test - 01]

1. **(a)** Round down 3104.062 to the nearest tenth. **(1 mark)**

(b) Round up 3104.062 to 2 decimal place. **(1 mark)**

(c) Round off 3104.062 to 2 significant figures. **(1 mark)**

3. [21 - 22 S1 Final Exam - 04] (67%)

4. Melody has $500 and she wants to buy 5 items at the supermarket with prices $109, $126, $75, $63 and $97 respectively. By using an appropriate estimation strategy, determine whether she has enough money to buy all 5 items. **(2 marks)**

4. [22 - 23 S1 Final Exam - 03] (59%)

3. **(a)** Round up 3.14159 to 3 significant figures. **(1 mark)**

(b) Round down 1.4152 to 2 decimal places. **(1 mark)**

5. [22 - 23 S1 Mid-year Exam - 06] (70%)

6. **(a)** Round off 18423 to the nearest hundred. **(1 mark)**

(b) Round up 0.048521 to 4 decimal places. **(1 mark)**

(c) Round down 2.1576 to 4 significant figures. **(1 mark)**

6. [22 - 23 S1 Mid-year Exam - 07] (58%)

7. Lisa buys 4 books in a book store. The prices of the books are $128, $145, $131 and $154 respectively. A gift will be awarded for any purchase more than $530. By using an appropriate estimation strategy, determine whether she can get the gift. **(2 marks)**

7. [23 - 24 S1 Final Exam - 13] (67%)

13. Kenneth wants to buy the following items:

Item	Price ($)
A box of cookies	14.8
A loaf of bread	17.3
A bottle of orange juice	26.7
A dozen of apples	37.3
A bag of chips	8.3

Kenneth can get a lucky draw ticket if the total amount of the items he bought exceeds $100. **By using a suitable approximation** for the price of each item and use these approximations to determine whether he can get a lucky draw ticket. Explain your answer. **(3 marks)**

8. [23 - 24 S1 Mid-year Exam - 07] (81%)

7. (a) Round off 0.031672 to 2 decimal places. **(1 mark)**

(b) Round up 0.031672 to 4 significant figures. **(1 mark)**

9. [24 - 25 S1 Final Exam - 13] (73%)

13. (a) Round up 143.5201 to the nearest hundredth. **(1 mark)**

(b) Round down 0.0137 to 2 significant figures. **(1 mark)**

(c) Round off 3.95 to 1 decimal place. **(1 mark)**

10. [24 - 25 S1 Final Exam - 20] (47%)

20. Alice has a $30 coupon, which can only be used when the total price is greater than $100. She is going to buy one of each item below:

Item	Price($)
Soy milk	27.8
Chocolate	25.2
Jello	31.5
Ice cream	30.0

(a) Use a suitable approximation for the price of each item to determine whether she can use the coupon or not? **(2 marks)**

(b) If Alice only has one 100-dollar note in her wallet, use a suitable approximation for the price of each item to determine whether she has enough money to pay for the purchase if she can use the coupon. **(2 marks)**

11. [24 - 25 S1 Mid-year Exam - 07] (88%)

7. **(a)** Round down 236 568 to the nearest hundred.

(b) Round up 687.4932 to 2 decimal places.

(c) Round off 0.195 to 2 significant figures.

(3 marks)

12. [24 - 25 S1 Mid-year Exam - 09] (73%)

9. The price of a bag of candies is \$7.4. Miss Lee wants to buy 8 bags of candies to her students.

(a) Write down the estimation of the total amount that Miss Lee needs to pay by

(i) rounding up the price of a bag of candies to the nearest integer, and

(ii) rounding down the price of a bag of candies to the nearest integer.

(b) Miss Lee claims that \$65 is enough for paying for 8 bags of candies. By using suitable estimation strategy in **(a)**, determine whether Miss Lee is correct. Explain your answer.

(4 marks)

13. [20 - 21 S2 Final Exam - 05] (73%)

5. **(a)** Round off 906.312 to the nearest ten. **(1 mark)**

(b) Round up 1.4521 to 2 decimal places. **(1 mark)**

(c) Round down 352789 to 3 significant figures. **(1 mark)**

14. [20 - 21 S2 Mid-year Exam - 04] (72%)

4. **(a)** Round up 643.567 to 2 significant figures. **(1 mark)**

(b) Round down 240 982 to 3 significant figures. **(1 mark)**

(c) Round off 0.00352888 to 4 significant figures. **(1 mark)**

15. [22 - 23 S4 Final Exam - 02] (92%)

2. **(a)** Round up 135.246 to the nearest integer.

(b) Round down 951.865 to 2 decimal places.

(c) Round off 245.832 to 2 significant figures.

(3 marks)

16. [21 - 22 S5 Final Exam - 03] (66%)

3. **(a)** Round up 234.5678 to the nearest hundred.

(b) Round down 234.5678 to 2 decimal places.

(c) Round off 234.5678 to 2 significant figures. **(3 marks)**

17. [23 - 24 S5 Final Exam - 03] (86%)

3. **(a)** Round up 1352.4976 to the nearest thousand.
(b) Round down 1352.4976 to 2 decimal places.
(c) Round off 1352.4976 to 4 significant figures.

(3 marks)

18. [21 - 22 S6 Standardized Test - 01] (87%)

1. **(a)** Round down 306.0197 to the nearest ten.
(b) Round off 0.042 147 6 to 3 significant figures.
(c) Round up 148.4132 to 2 decimal places.

(3 marks)

19. [23 - 24 S6 Standardized Test - 01] (79%)

1. **(a)** Round off 302.019684 to 4 significant figures.

(b) Round up 302.019684 to the nearest ten.

(c) Round down 302.019684 to 2 decimal places. **(3 marks)**