Truncation - Worksheet

Skill

Group A - Truncating numbers to decimal places

Truncate the following numbers to the given number of decimal places:

1) 3.14159 to 1 d.p

2) 3.14159 to 2 d.p

3) 3.14159 to 3 d.p

4) 0.15839 to 1 d.p

5) 0.15839 to 2 d.p

6) 0.15839 to 3 d.p

7) 27.39783 to 2 d.p

8) 27.39783 to 3 d.p

9) 27.39783 to 4 d.p

10) 7.29538 to 3 d.p

11) 9.9999 to 2 d.p

12) 0.00693 to 2 d.p

Group B - Truncating number to powers of 10

Truncate the following numbers to the place value specified:

1) 326.7 to the unit

2) 326.7 to the tens

3) 326.7 to the hundreds

4) $4,087.2$ to the unit

5) $4,087.2$ to the tens

6) $4,087.2$ to the hundreds

7) $65,832$ to the tens

8) $65,832$ to the hundreds

9) $65,832$ to the thousands

10) $285,419$ to the tens

11) $285,419$ to the thousands

12) $285,419$ to the ten thousands

Group C - Truncating numbers to significant figures

Truncate the following numbers to the given significant figure:

1) 0.02684 to 1 s.f

2) 0.02684 to 2 s.f

3) 0.02684 to 3 s.f

4) 23.561 to 1 s.f

5) 23.561 to 2 s.f

6) 23.561 to 3 s.f

7) $47,192$ to 1 s.f

8) $47,192$ to 2 s.f

9) $47,192$ to 3 s.f

10) $500,389$ to 2 s.f

11) $500,389$ to 3 s.f

12) $500,389$ to 4 s.f

Truncation - Worksheet

Applied

1) **(a)** Jo decides to approximate the solution to $\frac{562 \times 34}{17}$ by truncating the numbers in the calculation to 1 significant figure. What is the value of her approximation?

(b) Simon measures the height of a door and truncates the value to $200cm$ to the tens. Will the door fit on a doorway of height $208cm$ high? Explain your answer.

2) **(a)** Ben thinks of an integer. When the integer is truncated to the tens, it has a truncated value of 50. What is the largest integer Ben could have been thinking of?

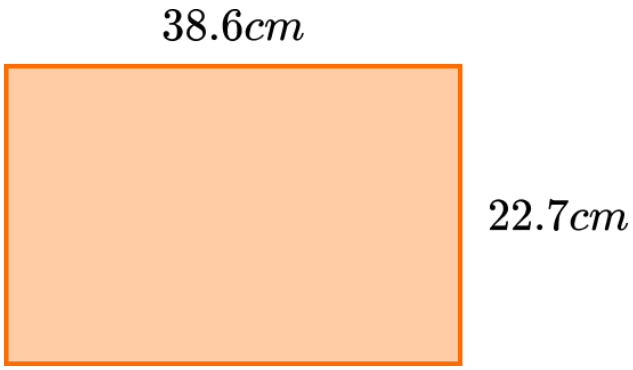
(b) Sarah's calculator is broken and truncates her answers to 1 significant figure.
She uses her calculator to work out a product of two integers and gets an truncated answer of 1000. If one of the integers is 57. What is the largest possible value of the other integer?

3) **(a)** A number x when truncated to the thousands is 3000. A number y when truncated to the hundreds is 1400. Find the range of values to satisfy the inequality ..... $\leq x + y <$.....

(b) Find a pair of numbers M and N so that $M - N = 70$ but when both M and N are truncated to 1 significant figure, the difference between them is 100.

Truncation - Worksheet

4) The diagram shows a rectangle with length $38.6cm$ and width $22.7cm$.



(a) Find an approximation to the area of the rectangle by truncating both measurements to the tens.

(b) Find an approximation to the perimeter of the rectangle by truncating the measurements to the units.

Truncation - Exam Questions

1) **(a)** Truncate 2. 7868 to 2 decimal places

.....

(1)

(b) Truncate 26834 to the thousands

.....

(1)

(2 marks)

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2) **(a)** Truncate the value of $\sqrt{62}$ to 1 decimal place

.....

(2)

(b) Truncate the value of 24^3 to 2 significant figures.

.....

(2)

(4 marks)

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3) **(a)** When x is truncated to the tens it becomes 400.
What is the largest possible integer value of x?

.....

(1)

(b) When y is truncated to the hundreds it becomes 2700.
What is the largest possible integer value of y?

.....

(1)

(2 marks)

Truncation - Exam Questions

4) **(a)** A rectangle has a length $6.487m$ and a width $3.924m$. By truncating the measurements to $10cm$, approximate the area of the rectangle.

.....

(3)

(b) A piece of string $14.45m$ long can be made into a circle with a diameter of approximately $4.6m$. By truncating the measurements to the metre, find an estimate for the value of π.

.....

(3)

(3 marks)

Truncation - Answers

	Question	Answer
	Skill Questions	
Group A	Truncate the following numbers to the given number of decimal places: **1)** 3.14159 to 1 d.p **2)** 3.14159 to 2 d.p **3)** 3.14159 to 3 d.p **4)** 0.15839 to 1 d.p **5)** 0.15839 to 2 d.p **6)** 0.15839 to 3 d.p **7)** 27.39783 to 2 d.p **8)** 27.39783 to 3 d.p **9)** 27.39783 to 4 d.p **10)** 7.29538 to 3 d.p **11)** 9.9999 to 2 d.p **12)** 0.00693 to 2 d.p	 **1)** 3.1 **2)** 3.14 **3)** 3.141 **4)** 0.1 **5)** 0.15 **6)** 0.158 **7)** 27.39 **8)** 27.397 **9)** 27.3978 **10)** 7.295 **11)** 9.99 **12)** 0.00
Group B	Truncate the following numbers to the place value specified: **1)** 326.7 to the unit **2)** 326.7 to the tens **3)** 326.7 to the hundreds **4)** $4,087.2$ to the unit **5)** $4,087.2$ to the tens **6)** $4,087.2$ to the hundreds **7)** $65,832$ to the tens **8)** $65,832$ to the hundreds **9)** $65,832$ to the thousands **10)** $285,419$ to the tens **11)** $285,419$ to the thousands **12)** $285,419$ to the ten thousands	 **1)** 326 **2)** 320 **3)** 300 **4)** $4,087$ **5)** $4,080$ **6)** $4,000$ **7)** $65,830$ **8)** $65,800$ **9)** $65,000$ **10)** $285,410$ **11)** $285,000$ **12)** $280,000$

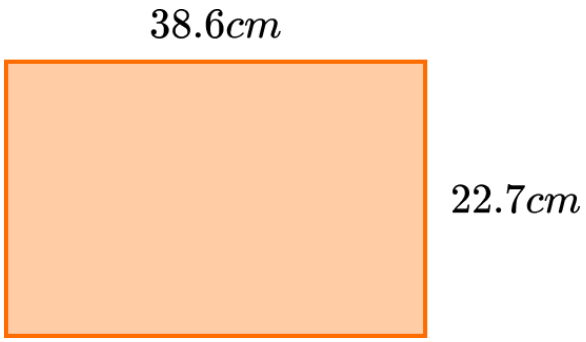
Truncation - Answers

Group C	Truncate the following numbers to the given significant figure:	
	1) 0.02684 to 1 s.f	**1)** 0.02
	2) 0.02684 to 2 s.f	**2)** 0.026
	3) 0.02684 to 3 s.f	**3)** 0.0268
	4) 23.561 to 1 s.f	**4)** 20
	5) 23.561 to 2 s.f	**5)** 23
	6) 23.561 to 3 s.f	**6)** 23.5
	7) $47,192$ to 1 s.f	**7)** $40,000$
	8) $47,192$ to 2 s.f	**8)** $47,000$
	9) $47,192$ to 3 s.f	**9)** $47,100$
	10) $500,389$ to 2 s.f	**10)** $500,000$
	11) $500,389$ to 3 s.f	**11)** $500,000$
	12) $500,389$ to 4 s.f	**12)** $500,300$

Truncation - Answers

	Question	Answer
	Applied Questions	
1)	**a)** Jo decides to approximate the solution to $\frac{562\times34}{17}$ by truncating the numbers in the calculation to 1 significant figure. What is the value of her approximation?	**a)** $\frac{500\times30}{10} = 1500$
	b) Simon measures the height of a door and truncates the value to $200cm$ to the tens. Will the door fit on a doorway of height $208cm$ high? Explain your answer.	**b)** No, the door could be $209.999...\ cm$ high.
2)	**a)** Ben thinks of an integer. When the integer is truncated to the tens, it has a truncated value of 50. What is the largest integer Ben could have been thinking of?	**a)** 59
	b) Sarah's calculator is broken and truncates her answers to 1 significant figure. She uses her calculator to work out a product of two integers and gets an truncated answer of 1000. If one of the integers is 57. What is the largest possible value of the other integer?	**b)** 35
3)	**a)** A number x when truncated to the thousands is 3000. A number $y$when truncated to the hundreds is 1400. Find the range of values to satisfy the inequality $\ldots\ldots \leq x + y < \ldots\ldots$	**a)** $4400 \leq x + y < 5500$
	b) Find a pair of numbers M and N so that $M - N = 70$ but when both M and $N$are truncated to 1 significant figure, the difference between them is 100.	**b)** e.g. $M = 220,\ N = 150$

Truncation - Answers

4)	The diagram shows a rectangle with length 38.6 cm and width 22.7 cm.  	
	a) Find an approximation to the area of the rectangle by truncating both measurements to the tens.	**a)** $600cm^2$
	b) Find an approximation to the perimeter of the rectangle by truncating the measurements to the units.	**b)** $120cm$

Truncation - Answers

	Question	Answer	
	Exam Questions		
1) (a)	Truncate 2.7868 to 2 decimal places	(a) 2.78	(1)
(b)	Truncate 26834 to the thousands	(b) 26000	(1)
2) (a)	Truncate the value of $\sqrt{62}$ to 1 decimal place	(a) $7.874\ldots$ 7.8	(1) (1)
(b)	Truncate the value of 24^3 to 2 significant figures.	(b) 13824 13000	(1) (1)
3) (a)	When x is truncated to the tens it becomes 400. What is the largest possible integer value of x?	(a) 409	(1)
(b)	When y is truncated to the hundreds it becomes 2700. What is the largest possible integer value of y?	(b) 2799	(1)
4) (a)	A rectangle has a length $6.487m$ and a width $3.924m$. By truncating the measurements to $10cm$, approximate the area of the rectangle.	(a) 6.4 or 3.9 6.4×3.9 $24.96\ m^2$	(1) (1) (1)
(b)	A piece of string 14.45 metres long can be made into a circle with a diameter of approximately $4.6m$. By truncating the measurements to the metre, find an estimate for the value of π.	(b) 14 or 4 $\frac{14}{4}$ 3.5	(1) (1) (1)