

Tender Heart High School, Sec-33B, Chandigarh

Class:- VI

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Subject:- Mathematics

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Ch-1

Approximation

Before approximation, we must know how to round off a number to the nearest ten, nearest hundred and nearest thousand, etc.

Rounding a Number to the Nearest Ten

Step 1. Look at the ones digit of the given number.

Step 2. If ones digit is less than 5, replace ones digit by 0 and keep the other digits as they are.

Step 3. If ones digit is 5 or more, increase tens digit by 1 and replace ones digit by 0.

Rounding a Number to the Nearest Hundred

Step 1: → Look at the tens digit of the given number.

Step 2: → If tens digit is less than 5, replace each one of the hundreds, tens and ones digits by 0 and keep the other digits as they are.

Step 3: → If tens digit is 5 or more, increase hundreds digit by 1 and replace each digit on its right by 0.

We may extend the ideas for large numbers.

EXERCISE 1D

1. Round each of the following numbers to the nearest 10.

(i) 54

Soln:- The given number is 54

Its ones digit is $4 < 5$

$\therefore$ Rounded number to the nearest ten = 50

(ii) 327

Soln:- The given number is 327.

Its ones digit is $7 > 5$

$\therefore$ Rounded number to the nearest ten = 330

(iii) 2,793

Soln:- The given number is 2,793

Its ones digit is $3 < 5$

$\therefore$ Rounded number to the nearest ten = 2,790

2. Round each of the following numbers to the nearest 100.

(i) 925

Soln:- The given number is 925

Its tens digit is $2 < 5$

$\therefore$ Rounded number to the nearest hundred = 900

(ii) 6,854

Soln:- The given number is 6854

Its tens digit is $5 = 5$

$\therefore$ Rounded number to the nearest hundred = 6900

3. Round each of the following numbers to the nearest thousand:

(i) 7,386

Soln:- The given number is 7,386.

Its hundreds digit is $3 < 5$.

$\therefore$ Rounded number to the nearest thousand = 7,000

(ii) 34,276

Soln:- The given number is 34,276

Its hundreds digit is $2 < 5$

$\therefore$ Rounded number to the nearest thousand = 34,000

4. Find the approximate sum to the nearest ten:-

(i) $(72 + 37)$

Soln:- 72 estimated to the nearest ten = 70

37 estimated to the nearest ten = 40

Hence, the required approximate sum
 $= (70 + 40) = 110$

(ii) $(264 + 348)$

Soln:- 264 estimated to the nearest ten = 260

348 estimated to the nearest ten = 350

Hence, the required approximate sum
 $= (260 + 350)$
 $= 610$

5. Find the approximate sum to the nearest hundred:

~~Soln:-~~ (i) $(347 + 476)$

Soln:- 347 estimated to the nearest hundred = 300

476 estimated to the nearest hundred = 500

Hence, the required estimated sum
 $= 300 + 500$
 $= 800$

(ii) $654 + 247$

Soln:- 654 estimated to the nearest hundred $= 700$
 247 " " " " " $= 200$

Hence, the required estimated sum
 $= 700 + 200$
 $= 900$

Q6. Find the approximate sum to the nearest thousand;

(i) $(43,728 + 36,275)$

$43,728$ estimated to the nearest thousand $= 44000$
 $36,275$ " " " " " $= 36000$

Required sum $= 44000 + 36000$
 $= 80000$

(ii) $(37,804 + 22,475)$

$37,804$ estimated to the nearest thousand $= 38,000$
 $22,475$ " " " " " $= 22000$

Required sum $= 38000 + 22000$
 $= 60000$

Q7. Find the approximate difference to the nearest ten:

(i) $(64 - 29)$

64 estimated to the nearest ten $= 60$

29 estimated to the nearest ten $= 30$

Difference $= 60 - 30 = 30$

Q.8 Find the difference (Approximate) to the nearest hundred.

(i) $769 - 435$

Soln:- 769 estimated to the nearest hundred = 800
 435 " " " " " " = 400

Required Difference = $(800 - 400) = 400$

Q9. Find the approximate difference to the nearest thousand:

(i) $(45,783 - 38,695)$

$45,783$ estimated to the nearest thousand = 46000
 $38,695$ " " " " " " = 39000

Required difference = $46000 - 39000$
 $= 7000$

Q10 Estimate each of the following products by rounding off each number to the nearest ten.

(i) (49×72)

Soln:- 49 estimated to the nearest ten = 50
 72 " " " " " " = 70

Required product = (50×70)
 $= 3500$

(ii) 63×57

63 estimated to the nearest ten = 60
 57 " " " " " " = 60

Required product = 60×60
 $= 3600$

Q11. Estimate each of the following products by rounding off each number to the nearest hundred:

(i) 265×334 .

Soln:- 265 estimated to the nearest hundred $= 300$
 334 " " " " " " $= 300$
 Product $= 300 \times 300$
 $= 90,000$

(ii) 457×872

Soln:- 457 estimated to the nearest hundred $= 500$
 872 " " " " " " $= 900$
 Product $= 500 \times 900$
 $= 4,50,000$

Q12. Find the approximate quotient for each of the following:-

(i) $86 \div 27$

Soln:- 86 estimated to the nearest ten $= 90$
 27 " " " " " " $= 30$
 $\Rightarrow 90 \div 30$
 $= 30$

Required quotient $= 30$

(ii) $286 \div 25$

$286 \approx 290$

$25 \approx 30$

$290 \div 30 = 9.6 \approx 10$