NCERT Solutions for 6th Class Maths: Chapter 7-Fractions

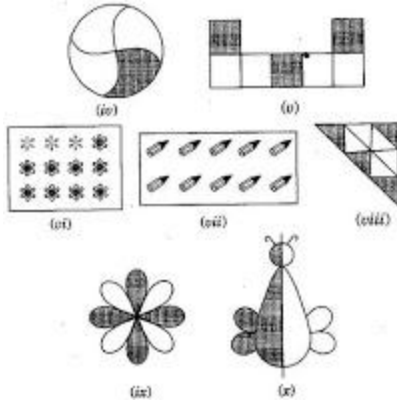Class 6: Maths Chapter 7 solutions. Complete Class 6 Maths Chapter 7 Notes.

NCERT Solutions for 6th Class Maths: Chapter 7-Fractions

NCERT 6th Maths Chapter 7, class 6 Maths Chapter 7 solutions

Exercise 7.1

1. Write the fraction representing the shaded portion:

Answer

(i)2/4

(ii) 8/9

(iii) 4/8

(iv)1/4

(v)3/7

(vi)9/12

(vii)10/10

(viii)4/9

(ix)4/8

(x)1/2

2. Colour the part according to the given fraction:

Answer

This is 1/2   This is 1/4   This is 3/4
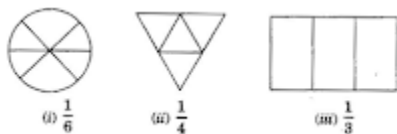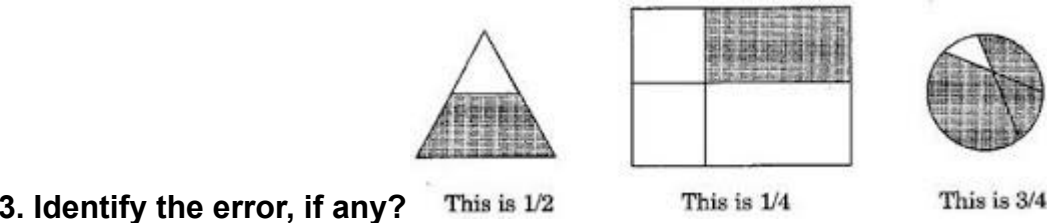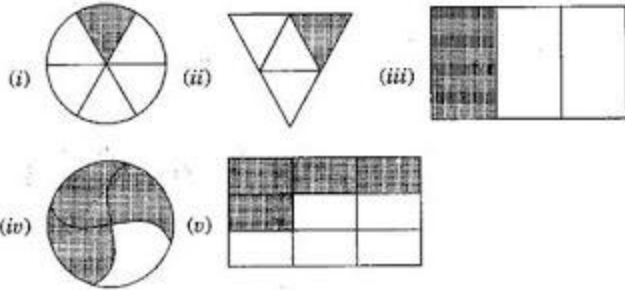
3. Identify the error, if any?

Answer

All the figures are not equally divided. For making fractions, it is necessary that figure is divided into equal parts.

4. What fraction of a day is 8 hours?

Answer

Since, 1 day = 24 hours.

Therefore, the fraction of 8 hours = 8/24=1/3

5. What fraction of an hour is 40 minutes?

Answer

Since, 1 hour = 60 minutes.

Therefore, the fraction of 40 minutes = 40/60=2/3

6. Arya, Abhimanyu and Vivek shared lunch. Arya has brought two sandwiches, one made of vegetable and one of jam. The other two boys forgot to bring their lunch. Arya agreed to share his sandwiches so that each person will have an equal share of each sandwich.

(a)How can Arya divide his sandwiches so that each person has an equal share?

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(b)What part of a sandwich will each boy receive?

Answer

(a) Arya will divide each sandwich into three equal parts and give one part of each sandwich to each one of them.

(b) 1×1/3=1/3

7. Kanchan dyes dresses. She had to dye 30 dresses. She has so far finished 20 dresses. What fraction of dresses has she finished?

Answer

Total number of dresses to dye= 30

Work completed = 20

Fraction of completed work = 20/30=2/3

8. Write the natural numbers from 2 to 12. What fraction of them are prime numbers?

Answer

Natural numbers from 2 to 12: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Prime numbers from 2 to 12: 2, 3, 5, 7, 11

Hence, fraction of prime numbers = 5/11

9. Write the natural numbers from 102 to 113. What fraction of them are prime numbers?
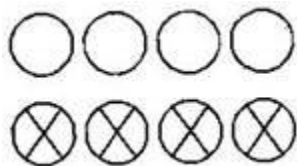
Answer

Natural numbers from 102 to 113: 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113

Prime numbers from 102 to 113: 103, 107, 109, 113

Hence fraction of prime numbers = 4/12=1/3

10. What fraction of these circles has 'X's in them?

Answer

Total number of circles = 8 and number of circles having 'X' = 4

Hence, the fraction = 4/8

11. Kristin received a CD player for her birthday. She bought 3 CDs and received 5 others as gifts. What fraction of her total CDs did she buy and what fraction did she receive as gifts?

Answer

Total number of CDs = 3 + 5 = 8

Number of CDs purchased = 3

Fraction of CDs purchased = 3/8

Fraction of CDs received as gifts = 5/8

Exercise 7.2

1. Draw number lines and locate the points on them:

(a)1/2,1/4,3/4,4/4
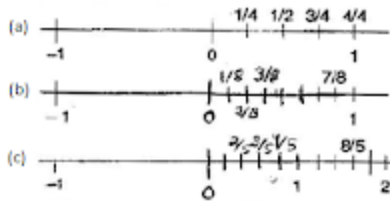
(b)1/8,2/8,3/8,7/8

(c)2/5,3/5,8/5,4/5

Answer

2. Express the following fractions as mixed fractions:

(a)20/3

(b)11/5

(c)17/7

(d)28/5

(e)19/6

(f)35/9

Answer

(a)

```
        6
3) 20 (
   -18
    2
```

20/3= 6.2/3

(b)

```
       2
5 ) 11 (
    10
    1
```

∴.11/5= 2.1/5

(c)

```
        2
   7 ) 17 (
       14
       ___
        3
       ___
```

∴.17/7= 2.3/7

(d)

```
        5
   5 ) 28 (
       25
       ___
        3
       ___
```

∴.28/5=5.3/5

(e)

```
        3
   6 ) 19 (
       18
       ___
        1
       ___
```

19/6=3.1/6

(f)

```
        3
   9 ) 35 (
       27
       ___
        8
       ___
```

∴.35/9=3.8/9

3. Express the following as improper fractions:

(a)7.3/4

(b)5.6/7

(c)2.5/6

(d)10.3/5

(e)9.3/7

(f)8.4/9

Answer

(a) 7.3/4 = {(7×4)+3}/4 = (28+3)/4 = 31/4

(b) 5.6/7 = {(5×7)+6}/7 = (35+6)/7 = 41/7

(c) 2.5/6 = {(2×6)+5}/6 = (12+5)/6 =17/6

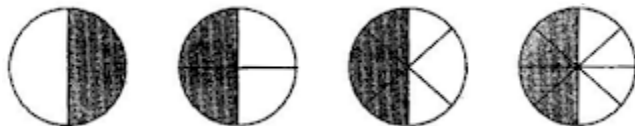(d) 10.3/5 = {(10×5)+3}/5 = (50+3)/5 = 53/5

(e) 9.3/7 = {(9×7)+3}/7= (63+3)/7 = 66/7

(f) 8.4/9 = {(8×9)+4}/9 = (72+4)/9 = 76/9

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Exercise 6.3

1. Write fractions. Are all these fractions equivalent:

(a)

(b)

Answer

(a) 1/2,2/4,3/6,4/8

Yes, all of these fractions are equivalent.

(b) 4/12,3/9,2/6,1/3,6/15

No, these fractions are not equivalent.

2. Write the fraction and pair up the equivalent fractions to each row:

Answer

(a) 1/2

(ii) 4/8=1/2

(b) 4/6=2/3

(iv) 8/12=2/3

(c) 3/9=1/3

(i) 6/18=1/3

(d) 2/8=1/4

(v) 4/16=1/4

(e) 1/4

(iii) 12/16

3. Replace __ in each of the following by the correct number:

(a) 2/7=8/__

(b) 5/8=10/__

(c) 3/5= __/20

(d) 45/60=15/__

(e) 18/24=__/ 4

Answer

(a) 2/7 = 2×4/7×4 = 8/28

(b) 5/8 = 5×2/8×2 = 10/16

(c) 3/5 = 3×4/5×4 = 12/20

(d) 45/60 = 45÷3/60÷3=15/20

(e) 18/24 = 18÷6/24÷6 = 3/4

4. Find the equivalent fraction of 3/5 having:

(a) denominator 20

(b) numerator 9

(c) denominator 30

(d) numerator 27

Answer

(a) 3/5 =3×4/5×4=12/20

(b) 3/5=3×3/5×3=9/15

(c) 3/5=3×6/5×6=18/30

(d) 3/5=3×9/5×9=27/45

5. Find the equivalent fraction of 36/48 with:

(a) numerator 9

(b) denominator 4

Answer

(a) 36/48 = 36÷4/48÷4 = 9/12

(b) 36/48 = 36÷12/48÷12 = 3/4

6. Check whether the given fraction are equivalent:

(a) 5/9,30/54

(b) 3/10,12/50

(c)7/13,5/11

Answer

(a) 5/9,30/54 = 5×6/9×6,30/54= 30/54, 30/54

Therefore, 5/9,30/54 are equivalent.

(b) 3/10,12/50= 3×5/10×5,12/50= 15/50,12/50

Therefore, 3/10,12/50 are not equivalent.

(c) 7/13,5/11 = 7×11/13×11,5×13/11×13 = 77/143,65/143

Therefore, 7/13,5/11 are not equivalent fraction.

7. Reduce the following fractions to simplest form:

(a) 48/60

(b) 150/60

(c) 84/98

(d) 12/52

(e) 7/28

Answer

(a) 48/60= (2×2×2×2×3)/(2×2×3×5) =4/5

(b) 150/60= (3×5×10)/(2×3×10)= 5/2

(c) 84/98= (2×3×14)/(7×14) = 6/7

(d) 12/52= (2×2×3)/(2×2×13) =3/13

(e) 7/28=7/(2×2×7)= 1/4

8. Ramesh had 20 pencils, Sheelu had 50 pencils and Jamaal had 80 pencils. After 4 months, Ramesh used up 10 pencils, Sheelu used up 25 pencils and Jamaal used up 40 pencils. What fraction did each use up? Check whether each has used an equal fraction of her/his pencils?

Answer

Ramesh: Total pencils = 20

Pencils used = 10

Fraction = 10/20 =1/2

Sheelu: Total pencils = 50

Pencils used = 25

Fraction = 25/50=1/2

Jamaal: Total pencils = 80

Pencils used = 40

Fraction = 40/80= 1/2

Since, all of them used half of their pencils, therefore each one of them used equal fraction of pencils.

9. Match the equivalent fractions and write two more for each:

| | (a) 2/3 |
|(i)250/400 | |

|(ii)180/200 | (b) 2/5 |

|(iii)660/99 0 | (c) 1/2 |

|(iv)180/36 0 | (d) 5/8 |

|(v)220/550 | (e) 9/10 |

Answer

(i) 250/400=5/8,10/16,15/24

(d) 5/8

(ii) 180/200=9/10,18/20,27/30

(e) 9/10

(iii) 660/990=2/3,4/6,6/96

(a) 2/3

(iv) 180/360=1/2,2/4,3/6
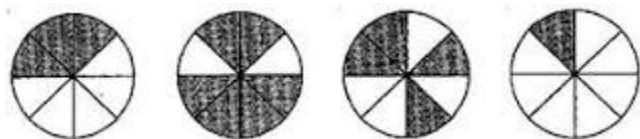
(c)1/2

(v) 220/550 = 2/5, 4/10, 6/15

(b) 2/5

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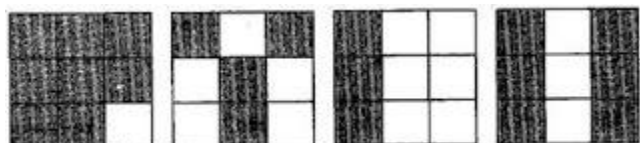
Exercise 7.4

1. Write shaded portion as fraction. Arrange them in ascending and descending order using correct sign '<', '>', '=' between the fractions:

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(a)

(b)

(c) Show 2/6,4/6,8/6 and 6/6on the number line. Put appropriate signs between the fractions given:

5/6 - 2/6, 3/6 - 0

1/6 - 6/6, 8/6 - 5/6

Answer

(a) 3/8,6/8,4/8,1/8

Ascending order: 1/8<3/8<4/8<6/8

Descending order: 6/8>4/8>3/8>1/8

(b) 8/9,4/9,3/9,6/9

Ascending order: 3/9<4/9<6/9<8/9

Descending order: 8/9>6/9>4/9>3/9

(c) Number line
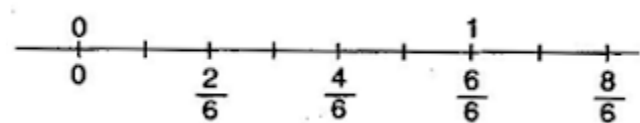
5/6>2/6 1/6<6/6

3/6>0/6 8/6>5/6

2. Compare the fractions and put an appropriate sign:

(a) 3/6 - 5/6

(b) 1/7 - 1/4

(c) 4/5 - 5/5

(d) 3/5 - 3/7

Answer

(a) 3/6<5/6

(b) 1/7<1/4

(c) 4/5<5/5

(d) 3/5>3/7

3. Make five more pairs and put appropriate signs.

Answer

(a) 9/10>6/10

(b) 1/3>1/6

(c) 1/8<1/5

(d) 7/8<11/8

(e) 11/13>9/13

4. Look at the figures and write '<' or '>' between the given pairs of fractions:
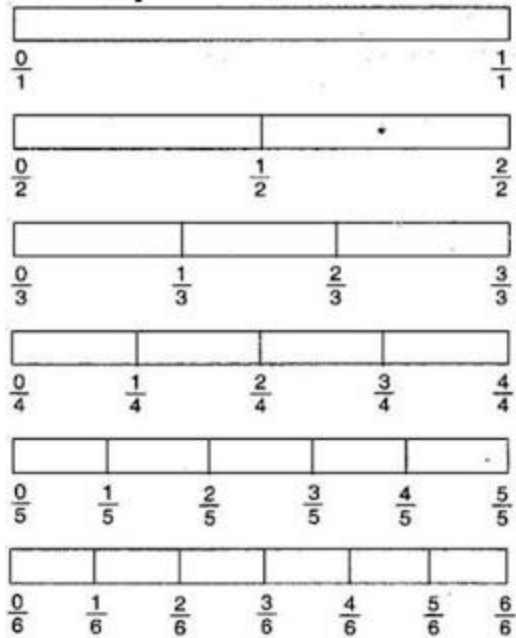
(a) 1/6 _1/3

(b) 3/4 _ 2/6

(c) 2/3 _ 2/4

(d) 6/6 _ 3/3

(e) 5/6 _5/5

Make five more such problems and solve them with your friends.

Five more such problems:

(a) 1/2 _ 3/6

(b) 2/3 _ 3/5

(c) 3/4 _ 4/6

(d) 5/6 _ 2/2

(e) 0/1 _ 0/6

Answer

(a) 1/6<1/3

(b) 3/4>2/6

(c) 2/3>2/4

(d) 6/6=3/3

(e) 5/6<5/5

Five more such problems solution:

(a) 1/2 = 3/6

(b) 2/3 > 3/5

(c) 3/4 > 4/6

(d) 5/6 < 2/2

(e) 0/1 = 0/6

5. How quickly can you do this? Fill the appropriate sign (<, =, >):

(a) 1/2 _ 1/5

(b) 2/4 _3/6

(c) 3/5 _ 2/3

(d) 3/4 _ 2/8

(e) 3/5 _ 6/5

(f) 7/9 _ 3/9

(g) 1/4 _ 2/8

(h) 6/10_ 4/5

(i) 3/4 _ 7/8

(j) 6/10 _ 4/5

(k) 5/7 _ 15/21

Answer

(a) 1/2 > 1/5

(b) 2/4 = 3/6

(c) 3/5 < 2/3

(d) 3/4 > 2/8

(e) 3/5 < 6/5

(f) 7/9 > 3/9

(g) 1/4 = 2/8

(h) 6/10 < 4/5

(i) 3/4 < 7/8

(j) 6/10 < 4/5

(k) 5/7 = 15/21

6. The following fractions represent just three different numbers. Separate them into three groups of equivalent fractions, by changing each one to its simplest form:

(a) 2/12

(b) 3/15

(c) 8/50

(d) 16/100

(e) 10/60

(f) 15/75

(g) 12/60

(h) 16/96

(i) 12/75

(j) 12/72

(k) 3/18

(l) 4/25

Answer

(a) 2/12=1/6

(b) 3/15=1/5

(c) 8/50=4/25

(d) 16/100=4/25

(e) 10/60=1/6

(f) 15/75=1/5

(g) 12/60=1/5

(h) 16/96=1/6

(i) 12/75=4/25

(j) 12/72=1/6

(k) 3/18=1/6

(l) 4/25=4/25

Equivalent groups:

I group: 1/5 [(b), (f), (g)]

II group: 1/6 [(a), (e), (h), (j), (k)]

III group: 4/25 [(c), (d), (i), (l)]

7. Find answers to the following. Write and indicate how you solved them:

(a) Is 5/9 equal to 4/5 ?

(b) Is 9/16equal to 5/9 ?

(c) Is 4/5 equal to 16/20 ?

(d) Is 1/15 equal to 4/30 ?

Answer

(a)5/9 and 4/5

⇒ 5×5/9×5 =25/45 and 4×9/5×9=36/45 [∵ L.C.M. of 9 and 5 is 45]

Since, 25/45≠36/45

Therefore, 5/9≠4/5

(b) 9/16 and 5/9

⇒ 9×9/16×9= 81/144 and 5×16/9×16=80/144 [∵ L.C.M. of 16 and 9 is 144]

Since, 81/144≠80/144

Therefore, 9/16≠5/9

(c) 4/5 and 16/20

⇒ 4×20/ 5×20=80/100 and 16×5/20×5=80/100 [∵ L.C.M. of 5 and 20 is 100]

Since, 80/100=80/100

Therefore, 4/5=16/20

(d) 1/15 and 4/30

⇒ 1×21/5×2=2/30 and 4×1/30×1=4/30 [∵ L.C.M. of 15 and 30 is 30]

Since, 2/30≠4/30

Therefore,

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1/15≠4/30

8. Ila read 25 pages of a book containing 100 pages. Lalita read 2/5 of the same book. Who read less?

Answer

Ila read 25 pages out of 100 pages.

Fraction of reading the pages = 25/100=1/4th part of book

Lalita read 2/5th part of book = 40/100 pages

Since 1/4<2/5

Therefore, Ila read less.

9. Rafiq exercised for 3/6 of an hour, while Rohit exercised for 3/4 of an hour. Who exercised for a longer time?

Answer

Rafiq exercised 3/6 of an hour.

Rohit exercised 3/4 of an hour.

Since 3/4>3/6

Therefore, Rohit exercised for a longer time.

10. In a class A of 25 students, 20 passed in first class; in another class B of 30 students, 24 passed in first class. In which class was a greater fraction of students getting first class?

Answer

In class A, 20 passed out of 25, i.e., 20/25= 4/5
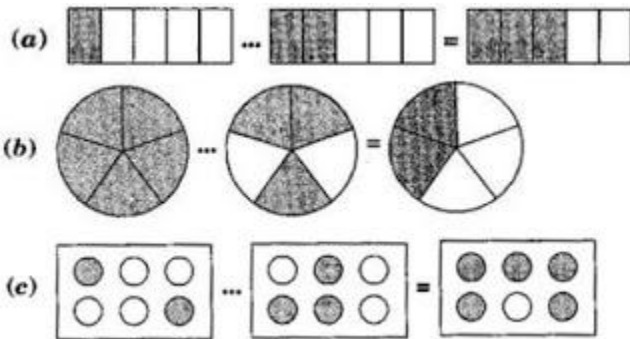
In class B, 24 passed out of 30, i.e., 24/30 = 4/5

Hence, each class have same fraction of student getting first class.

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Exercise 7.5

1. Write the fractions appropriately as additions or subtractions

Answer

(a) 1/5+2/5=(1+2)/5= 3/5

(b) 5/5−3/5=(5−3)/5=2/5

(c) 2/6+3/6=(2+3)/6=5/6

2. Solve:

(a) 1/18+1/18

(b) 8/15+3/15

(c) 7/7−5/7

(d) 1/22+21/22

(e) 12/15−7/15

(f) 5/8+3/8

(g) 1−2/3(1=3/3)

(h) 1/4+0/4

(i) 3−12/5

Answer

(a) 1/18+1/18=(1+1)/18=2/18=1/9

(b) 8/15+3/15=(8+3)/15=11/15

(c) 7/7−5/7=(7−5)/7=2/7

(d) 1/22+21/22=(1+21)/22=22/22=1

(e) 12/15−7/15=(12−7)/15=5/15=1/3

(f) 5/8+3/8=8/8=1

(g) 1−2/3=3/3−2/3=(3−2)/2=1/3

(h) 1/4+0/4=(1+0)/4=1/4

(i) 3−12/5=15/5−12/5=(15−12)/5=3/5

3. Shubham painted 2/3 of the wall space in his room. His sister Madhavi helped and painted 1/3 of the wall space. How much did they paint together?

Answer

Fraction of the wall painted by Shubham = 2/3

Fraction of the wall painted by Madhavi = 1/3

Total painting done by both of them = 2/3+1/3=(2+1)/3= 3/3=1

Therefore, they painted the wall completely.

4. Fill in the missing fractions:

(a) 7/10− __ = 3/10

(b) __ −3/21 =5/21

(c) __ −3/6=3/6

(d) __ +5/27=12/27

Answer

(a) 4/10

(b) 8/21

(c) 6/6

(d) 7/27

5. Javed was given a basket of 7 oranges, He sold only 5 oranges. What fraction of oranges was left in the basket?

Answer

Total = 1

Fraction of Orange left = 1−5/7

= 7/7−5/7=7−5/7=2/7

Thus, 2/7 oranges was left in the basket.

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Exercise 7.6

1. Solve:

(a) 2/3+1/7

(b) 3/10+7/15

(c) 4/9+2/7

(d) 5/7+1/3

(e) 2/5+1/6

(f) 4/5+2/3

(g) 3/4−1/3

(h) 5/6−1/3

(i) 2/3+3/4+1/2

(j) 1/2+1/3+1/6

(k) 1.1/3+3.2/3

(l) 4.2/3+3.1/4

(m) 16/5−7/5

(n) 4/3−1/2

Answer

(a) L.C.M. of 3 and 7 is 21

∴ 2/3+1/7=(2×7+1×3)/21=(14+3)/21=17/21

(b) L.C.M. of 10 and 15 is 30

∴ 3/10+7/15=(3×3+7×2)/30=(9+14)/30=23/30

(c) L.C.M. of 9 and 7 is 63

∴ 4/9+2/7=(4×7+2×9)/63=(28+18)/63=46/63

(d) L.C.M. of 7 and 3 is 21

∴ 5/7+1/3=(5×3+7×1)/21=(15+7)/21=22/21=1.1/21

(e) L.C.M. of 5 and 6 is 30

∴ 2/5+1/6=(2×6+5×1)/30=(12+5)/30=17/30

(f) L.C.M. of 5 and 3 is 15

∴ 4/5+2/345+23 = (4×3+2×5)/15=(12+10)/15=22/15=1.7/15

(g) L.C.M. of 4 and 3 is 12

∴ 3/4−1/3=(3×3−4×1)/12=(9−4)/12=5/12

(h) L.C.M. of 6 and 3 is 6

∴ 5/6−1/3=(5×1−2×1)/6=(5−2)/6=3/6=1/2

(i) L.C.M. of 3, 4 and 2 is 12

∴ 2/3+3/4+1/2=(2×4+3×3+1×6)/12=(6+9+6)/12=23/12=1.11/12

(j) L.C.M. of 2, 3, and 6 is 6

∴ 1/2+1/3+1/6=(1×3+1×2+1×1)/6= (3+2+1)/6=6/6=1

(k) L.C.M. of 3 and 3 is 3

∴ 4/3+11/3=(4+11)/3=15/3=5

(l) L.C.M. of 3 and 4 is 12

∴ 14/3+13/4=(14×4+13×3)/12=(56+39)/12=95/12=7.11/12

(m) L.C.M. of 5 and 5 is 5

∴ 16/5−7/5=(16−7)/5=9/5=1.4/5

(n) L.C.M. of 3 and 2 is 6

∴ 4/3−1/2=(4×2−1×3)/6= (8−3)/6=5/6

2. Sarika bought 2/5 meter of ribbon and Lalita 3/4 meter of ribbon. What is the total length of the ribbon they bought?

Answer

Ribbon bought by Sarita = 2/5 m and Ribbon bought by Lalita = 3/4 m

Total length of the ribbon = 2/5+3/4= (2×4+5×3)/20 [∵ L.C.M. of 5 and 4 is 20]

= (8+15)/20=23/20=1.3/20 m

Therefore, they bought 1.3/20 m of ribbon.

3. Naina was given 1.1/2piece of cake and Najma was given 1.1/3piece of cake. Find the total amount of cake given to both of them.

Answer

Cake taken by Naina = 1.1/2 piece and Cake taken by Najma = 1.1/3 piece

Total cake taken = 1.1/2+ 1.1/3= 3/2+4/3 = (3×3+4×2) [∵ L.C.M. of 2 and 3 is 6]

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= (9+8)/6=17/6=25/6

Therefore total consumption of cake is 25/6.

4. Fill in the boxes:

(a) ___ −5/8=1/4

(b)__ −1/5=1/2

(c) 1/2− __=1/6
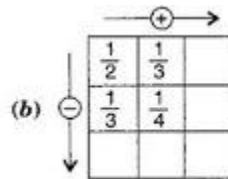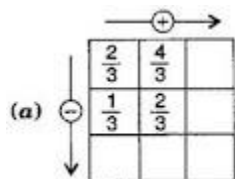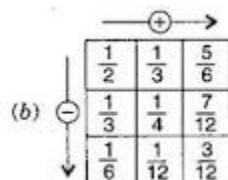
Answer

(a) 1/4+5/8=(2+5)/8=7/8
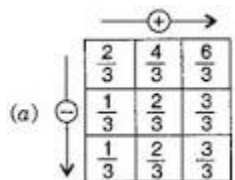
(b) 1/2+1/5=(5+2)/10=7/10

(c) 1/2−1/6=(3−1)/6=2/6

5. Complete the addition – subtraction box:

Answer

6. A piece of wire 7/8meter long broke into two pieces. One piece was 1/4 meter long. How long is the other piece?

Answer

Total length of wire = 7/8 meter

Length of first part = 1/4 meter

Remaining part = 7/8−1/4=(7×1−2×1)/8 [∵ L.C.M. of 8 and 4 is 8]

= (7−2)/8=5/8meter

Therefore, the length of the remaining part is 5/8 meter.

7. Nandini house is 9/10 km from her school. She walked some distance and then took a bus for 1/2 km to reach the school. How far did she walk?

Answer

Total distance between the school and house = 9/10 km

Distance covered by bus = 1/2 km

Remaining distance = 9/10−1/2=(9×1−1×5)/10 [∵ L.C.M. of 10 and 2 is 10]

= (9−5)/10=4/10=2/5 km

Therefore, distance covered by walking us 2/5 km.

8. Asha and Samuel have bookshelves of the same size partly filled with books. Asha's shelf is 5/6th full and Samuel's shelf is 2/5th full. Whose bookshelf is more filled and by what fraction?

Answer

5/6 and 2/5

⇒ 5/6×5/5=25/30 and 2/5×6/6=12/30 [∵ L.C.M. of 6 and 5 is 30]

∵ 25/30>12/30 ⇒ 5/6>2/5

∴ Asha's bookshelf is more covered than Samuel.

Difference = 25/30−12/30=13/30

9. Jaidev takes 2.1/5 minutes to walk across the school ground. Rahul takes 7/4 minutes to do the same. Who takes less time and by what fraction?

Answer

Time taken by Jaidev = 2.1/5 minutes = 11/5minutes

Time taken by Rahul = 7/4 minutes

Difference = 11/5−7/4= (11×4−7×5)/20 [∵ L.C.M. of 5 and 4 is 20]

= (44−35)/20=9/20 minutes

Thus, Rahul takes less time, which is 9/20 minutes.

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