MATHS

NCERT - NCERT MATHEMATICS(Hinglish)

FRACTIONS

Exercise 7 1

1. Write the natural numbers from 102 to 113.

What fraction of them are prime numbers?

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

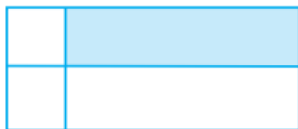**3.** Identify the error, if any.

This is $\frac{1}{2}$ This is $\frac{1}{4}$ This is $\frac{3}{4}$
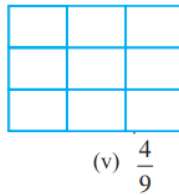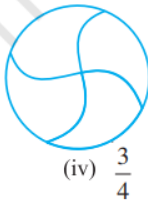
4. Color the part according to the given fraction

(i) $\dfrac{1}{6}$

(ii) $\dfrac{1}{4}$

(iii) $\dfrac{1}{3}$

(iv) $\dfrac{3}{4}$

(v) $\dfrac{4}{9}$
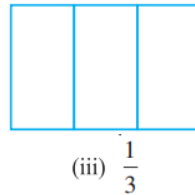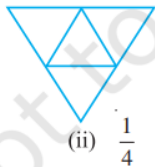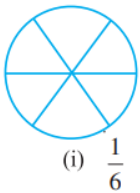
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5. Write the fraction representing the shaded portion.

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

7. 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?

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

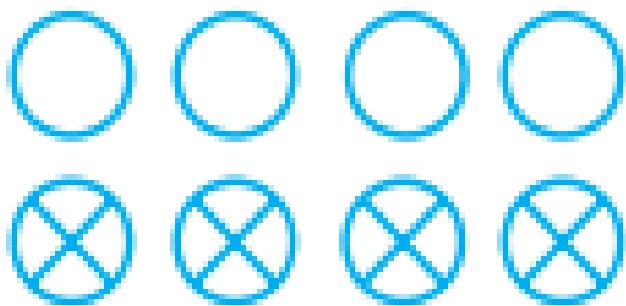**8.** What fraction of an hour is 40 minutes?

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9. What fraction of a day is 8 hours?

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

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?

1. Express the following as mixed fractions : (a) $\dfrac{20}{13}$ (b) $\dfrac{11}{5}$ (c) $\dfrac{17}{7}$ (d) $\dfrac{28}{5}$ (e) $\dfrac{19}{6}$ (f) $\dfrac{35}{9}$

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2. Express the following as improper fractions :

(a) $(7)\dfrac{3}{4}$

(b) $(5)\dfrac{6}{7}$

(c) $(2)\dfrac{5}{6}$

(d) $(10)\dfrac{3}{5}$

(e) $(9)\dfrac{3}{7}$

(f) $(8)\dfrac{9}{4}$

3. Draw number lines and locate the points on them : (a) $\dfrac{1}{2}, \dfrac{1}{4}, \dfrac{3}{4}, \dfrac{4}{4}$, (b) $\dfrac{1}{8}, \dfrac{2}{8}, \dfrac{3}{8}, \dfrac{7}{8}$, (c) $\dfrac{2}{5}, \dfrac{3}{5}, \dfrac{8}{5}, \dfrac{4}{4}$

Exercise 7 5

1. Solve :

(a) $\dfrac{1}{18} + \dfrac{1}{18}$

(b) $\dfrac{8}{15} + \dfrac{3}{15}$

(c) $\dfrac{7}{5} - \dfrac{5}{7}$

(d) $\dfrac{1}{22} + \dfrac{21}{22}$

(e) $\dfrac{12}{15} - \dfrac{7}{15}$

(f) $\dfrac{5}{8} + \dfrac{3}{8}$

(g) $(1) - \dfrac{2}{3}$

(h) $\dfrac{1}{4} + \dfrac{0}{4}$

(i) $3 - \dfrac{12}{5}$

2. Javed was given $\dfrac{5}{7}$ of a basket of oranges. What fraction of oranges was left in the basket?

3. Fill in the missing fractions.

(a) $\dfrac{7}{10} - \square = \dfrac{3}{10}$ (b) $\square - \dfrac{3}{21} = \dfrac{5}{21}$ (c) $\square - \dfrac{3}{6} = \dfrac{3}{6}$ (d) $\square + \dfrac{5}{27} = \dfrac{12}{27}$

4. Write these fractions appropriately as additions or subtractions :

(a)

(b)

(c)

5. Shubham painted $\dfrac{2}{3}$ of the wall space in his room. His sister Madhavi helped and painted

$\dfrac{1}{3}$ of the wall space. How much did they paint together?

Exercise 7 4

1. Ila read 25 pages of a book containing 100 pages. Lalita read $\dfrac{2}{5}$ of the same book. Who read less?

2. Rafiq exercised for $\dfrac{3}{6}$ of an hour, while Rohit exercised for `3/4 of an hour. Who exercised for a longer time?

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

(a) Is $\dfrac{5}{9}$ equal to $\dfrac{4}{5}$?

(b) is $\dfrac{9}{16}$ equal to $\dfrac{5}{9}$?

(c) is $\dfrac{4}{5}$ equal to $\dfrac{16}{20}$?
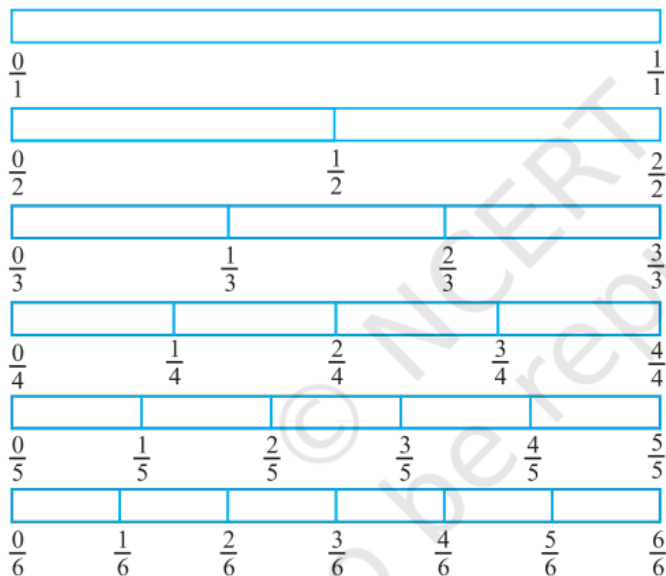
(d) is $\dfrac{1}{15}$ equal to $\dfrac{4}{30}$?

4. 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?

5. Look at the figures and write $<$ or $>$ $=$ between the given pairs of fractions (a) (b) (c)

(d) (e) Make five more such problems and solve them with your friends.

$$\frac{0}{1} \qquad\qquad\qquad\qquad\qquad \frac{1}{1}$$

$$\frac{0}{2} \qquad\qquad \frac{1}{2} \qquad\qquad \frac{2}{2}$$

$$\frac{0}{3} \qquad \frac{1}{3} \qquad \frac{2}{3} \qquad \frac{3}{3}$$

$$\frac{0}{4} \qquad \frac{1}{4} \qquad \frac{2}{4} \qquad \frac{3}{4} \qquad \frac{4}{4}$$

$$\frac{0}{5} \qquad \frac{1}{5} \qquad \frac{2}{5} \qquad \frac{3}{5} \qquad \frac{4}{5} \qquad \frac{5}{5}$$

$$\frac{0}{6} \quad \frac{1}{6} \quad \frac{2}{6} \quad \frac{3}{6} \quad \frac{4}{6} \quad \frac{5}{6} \quad \frac{6}{6}$$

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6. How quickly can you do this? Fill appropriate sign. ($<$ $=$ $>$)

(a) $\dfrac{1}{2}\ \square\ \dfrac{1}{5}$ (b) $\dfrac{2}{4}\ \square\ \dfrac{3}{6}$ (c) $\dfrac{3}{5}\ \square\ \dfrac{2}{3}$

(d) $\dfrac{3}{4}\ \square\ \dfrac{2}{8}$ (e) $\dfrac{3}{5}\ \square\ \dfrac{6}{5}$ (f) $\dfrac{7}{9}\ \square\ \dfrac{3}{9}$

(g) $\dfrac{1}{4}\ \square\ \dfrac{2}{8}$ (h) $\dfrac{6}{10}\ \square\ \dfrac{4}{5}$ (i) $\dfrac{3}{4}\ \square\ \dfrac{7}{8}$

(j) $\dfrac{6}{10}\ \square\ \dfrac{3}{5}$ (k) $\dfrac{5}{7}\ \square\ \dfrac{15}{21}$

7. Write shaded portion as fraction. Arrange them in ascending and descending order using correct sign $<\ =\ >$ between the fractions: Show $\dfrac{2}{6}, \dfrac{4}{6}, \dfrac{8}{6}$ and $\dfrac{6}{6}$ on the

number line. Put appropriate signs between the fractions given.

8. Make five more such pairs and put appropriate signs.

9. Compare the fractions and put an appropriate sign.

(a) $\dfrac{3}{6}$, $\dfrac{5}{6}$ (b) $\dfrac{1}{7}$, $\dfrac{1}{4}$ (c) $\dfrac{4}{5}$,

$\dfrac{5}{5}$ (d) $\dfrac{3}{5}$, $\dfrac{3}{7}$

10. 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) $\dfrac{2}{12}$

(b) $\dfrac{3}{15}$

(c) $\dfrac{8}{50}$

(d) $\dfrac{16}{10}$

(e) $\dfrac{10}{60}$

(f) $\dfrac{15}{75}$

(g) $\dfrac{12}{60}$

(h) $\dfrac{16}{96}$

(i) $\dfrac{12}{72}$

(j) $\dfrac{3}{18}$

(k) $\dfrac{3}{18}$

(l) $\dfrac{4}{25}$

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Solved Examples

1. Subtract $\dfrac{3}{4}$ from $\dfrac{5}{6}$.

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2. Add $\dfrac{2}{5}$ to $\dfrac{1}{3}$

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3. Find the equivalent fraction of $\dfrac{15}{35}$ with denominator 7.

4. Find the equivalent fraction of $\dfrac{2}{9}$ with denominator 63.

5. Compare $\dfrac{4}{5}$ and $\dfrac{5}{6}$

6. Compare $\dfrac{5}{6}$ and $\dfrac{13}{15}$

7. Express the following as mixed fractions : (a) $\dfrac{17}{4}$ (b) $\dfrac{11}{3}$ (c) $\dfrac{27}{5}$ (d) $\dfrac{7}{3}$

8. Express the following mixed fractions as improper fractions (a) $2\dfrac{3}{4}$ (b) $7\dfrac{1}{9}$ (c) $5\dfrac{3}{7}$

9. Find the equivalent fraction of $\dfrac{2}{5}$ with numerator 6.

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10. Simplify $\dfrac{3}{5} - \dfrac{7}{20}$

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11. Simplify : $(8)\dfrac{1}{4} - (2)\dfrac{5}{6}$

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12. Find

$(4)\dfrac{2}{5} - (2)\dfrac{1}{5}$

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13. Add $2\dfrac{4}{5}$ and $3\dfrac{5}{6}$

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Exercise 7 6

1. A piece of wire $\dfrac{7}{8}$ metre long broke into two pieces. One piece was $\dfrac{1}{4}$ metre long. How long is the other piece?

2. Nandini's house is $\dfrac{9}{10}$ km from her school. She walked some distance and then took a bus for $\dfrac{1}{2}$ km to reach the school. How far did she walk?

3. Fill in the boxes :

: (a) $\Box - \dfrac{5}{8} = \dfrac{1}{4}$ (b) $\Box - \dfrac{1}{5} = \dfrac{1}{2}$ (c) $\dfrac{1}{2} - \Box = \dfrac{1}{6}$

4. Complete the addition-subtraction box

5. Sarita bought $\dfrac{2}{5}$ metre of ribbon and Lalita $\dfrac{3}{4}$ metre of ribbon. What is the total length of the ribbon they bought?

6. Naina was given $(1)\dfrac{1}{2}$ piece of cake and Najma was given (1) $\dfrac{1}{3}$ piece of cake. Findthe total amount of cake was given to both of them.

7. Solve

(a) $\dfrac{2}{3} + \dfrac{1}{7}$

(b) $\dfrac{3}{10} + \dfrac{7}{15}$

(c) $\dfrac{4}{9} + \dfrac{2}{7}$

(d) $\dfrac{5}{7} + \dfrac{1}{3}$

(e) $\dfrac{2}{5} + \dfrac{1}{6}$

(f) $\dfrac{4}{5} + \dfrac{2}{3}$

(g) $\left(\dfrac{3}{4}\right) - \left(\dfrac{1}{3}\right)$

(h) $\left(\dfrac{5}{6}\right) - \left(\dfrac{1}{3}\right)$

(i) $\dfrac{2}{3} + \dfrac{3}{4} + \dfrac{1}{2}$

(j) $\dfrac{1}{2} + \dfrac{1}{3} + \dfrac{1}{6}$

(k) $1\dfrac{1}{3} + 3\dfrac{2}{3}$

(l) $4\dfrac{2}{3} + 3\dfrac{1}{4}$

(m) $\left(\dfrac{16}{5}\right) - \left(\dfrac{7}{5}\right)$

(n) $\dfrac{4}{3} - \dfrac{1}{2}$

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8. Asha and Samuel have bookshelves of the same size partly filled with books. Asha's shelf is $\dfrac{5}{6}$ th full and Samuel's shelf is $\dfrac{2}{5}$ th full. Whose bookshelf is more full? By what fraction?

9. Jaidev takes $2\dfrac{1}{5}$ minutes to walk across the school ground. Rahul takes $\dfrac{7}{4}$ minutes to do the same. Who takes less time and by what fraction?

Exercise 7 3

1. Match the equivalent fractions and write two more for each. $(i)\ \dfrac{250}{400}$ $\qquad (a)\ \dfrac{2}{3}$

$(ii)\ \dfrac{180}{200}$ $\qquad (b)\ \dfrac{2}{5}$

$(iii)\ \dfrac{660}{990}$ $\qquad (c)\ \dfrac{1}{2}$

$(iv)\ \dfrac{180}{360}$ $\qquad (d)\ \dfrac{5}{8}$

$(v)\ \dfrac{220}{550}$ $\qquad (e)\ \dfrac{9}{10}$

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2. 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 if each has used up an equal fractionof her/his pencils

3. Find the equivalent fraction of $\dfrac{36}{48}$ with:

(a) numerator 9

(b) denominator 4

4. Find the equivalent fraction of $\dfrac{3}{5}$ having (a) denominator 20 (b) numerator 9 (c) denominator 30 (d) numerator 27

5. Reduce the following fractions to simplest form : (a) $\dfrac{48}{60}$ (b) $\dfrac{150}{60}$ (c) $\dfrac{84}{98}$ (d) $\dfrac{12}{52}$ (e) $\dfrac{7}{28}$

6. Check whether the given fractions are equivalent : (a) $\dfrac{5}{9}, \dfrac{30}{54}$ (b) $\dfrac{3}{10}, \dfrac{12}{50}$ (c) $\dfrac{7}{13}, \dfrac{5}{11}$
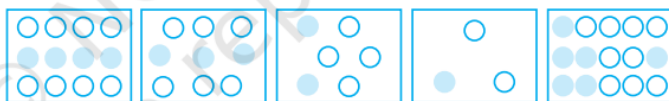
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7. Write the fractions. Are all these fractions equivalent?

(a)

(b)

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8. Replace □ in each of the following by the correct number :

(a) $\dfrac{2}{7} = \dfrac{8}{\square}$

(b) $\dfrac{5}{8} = \dfrac{10}{\square}$

(c) $\dfrac{3}{5} = \dfrac{\square}{20}$

(d) $\dfrac{45}{60} = \dfrac{15}{\square}$

(e) $\dfrac{18}{24} = \dfrac{\square}{4}$

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9. Write the fractions and pair up the equivalent fractions from each row.
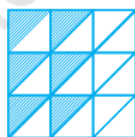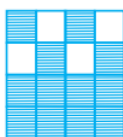

(a)   (b)   (c)   (d)   (e)

(i)   (ii)   (iii)   (iv)   (v)