2.3-3 Fractions: Practice Set 3: 30-minute Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

Fractions: Practice Set 3

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A third original 11+ fractions practice set, complementing EP.M3 (Fractions), EP.M3B (Fractions: Practice Set 2), EP.M30 and EP.M36 (Fractions, Decimals and Percentages Depth). It covers equivalence, simplifying, ordering, converting between mixed numbers and improper fractions, all four operations with proper fractions and mixed numbers, finding fractions of an amount, and worded and multi-step reasoning problems. Questions are ramped from straightforward warm-up items to demanding multi-step problems designed to stretch the strongest candidates.

1 Work out 7/8 - 5/12, giving your answer in its simplest form.

(2)

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2 Work out 5 1/4 - 2 5/6, giving your answer as a mixed number in its simplest form.

(2)

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3 Work out 4/9 x 3/10, giving your answer in its simplest form.

(2)

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4 Work out 1 3/5 x 2 1/4, giving your answer as a mixed number in its simplest form.

(2)

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5 Write 67/9 as a mixed number in its simplest form.

- ☐ A) 6 4/9
- ☐ B) 7 4/9
- ☐ C) 8 4/9
- ☐ D) 7 1/9
- ☐ E) 7 5/9

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6 Which fraction is equivalent to 4/10?

- ☐ A) 1/4
- ☐ B) 2/5
- ☐ C) 3/6
- ☐ D) 4/5
- ☐ E) 5/10

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7 Simplify 18/30 fully.

- ☐ A) 6/10
- ☐ B) 2/3
- ☐ C) 1/2
- ☐ D) 3/5
- ☐ E) 9/15

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8 Find the missing number: 7/9 = ?/36

- ☐ A) 4
- ☐ B) 40
- ☐ C) 24
- ☐ D) 32
- ☐ E) 28

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9 Which list shows these fractions in order of size, smallest first: 2/3, 5/8, 7/12?

- ☐ A) 7/12, 5/8, 2/3
- ☐ B) 2/3, 5/8, 7/12
- ☐ C) 5/8, 7/12, 2/3
- ☐ D) 7/12, 2/3, 5/8
- ☐ E) 2/3, 7/12, 5/8

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10 A greengrocer in Manchester has 210 kg of apples for sale. By midday, 2/7 of the apples have been sold. Of the apples that remain, 3/5 are sold during the afternoon. How many kilograms of apples are left unsold at the end of the day?

(4)

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11 3/8 of a number is 54. Find 5/6 of the same number.

(4)

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12 At a fair in Aberdeen, 1/4 of the visitors arrive before midday. Of the visitors who arrive at midday or later, 3/7 arrive between midday and 3pm, and the rest arrive after 3pm. Given that 96 visitors arrive after 3pm, work out the total number of visitors at the fair.

(5)

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13 Calculate (5/6 - 3/8) / (7/9 + 1/3), giving your answer as a fraction in its simplest form.

(4)

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14 A sequence of fractions begins 3/5, 5/8, 7/11, 9/14, ... Write the next two terms, and give a rule for the nth term.

(3)

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Mark scheme · 2.3-3 Fractions: Practice Set 3: 30-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

both fractions converted to a common denominator, e.g. 21/24 - 10/24	**M1**
11/24 cao	**A1**

Answer: 11/24

Question 2

both mixed numbers converted to a common denominator, e.g. 63/12 - 34/12	**M1**
2 5/12 cao	**A1**

Answer: 2 5/12

Question 3

4/9 x 3/10 = 12/90 seen (or equivalent unsimplified fraction)	**M1**
2/15 cao	**A1**

Answer: 2/15

Question 4

both mixed numbers converted to improper fractions and multiplied, e.g. 8/5 x 9/4 = 72/20	**M1**
3 3/5 cao	**A1**

Answer: 3 3/5

Question 5

B) 7 4/9 cao	**B1**

Answer: 7 4/9

Question 6

B) 2/5 cao	**B1**

Answer: B) 2/5

Question 7

D) 3/5 cao (HCF of 18 and 30 is 6)	**B1**

Answer: D) 3/5

Question 8

E) 28 cao	**B1**

Answer: E) 28

Question 9

A) 7/12, 5/8, 2/3 cao	**B1**

Answer: A) 7/12, 5/8, 2/3

Question 10

2/7 x 210 (= 60) seen	**M1**
150 kg remaining after midday	**A1**
3/5 x 150 (= 90), ft from the remaining apples	**M1**
60 kg cao	**A1**

Answer: 60 kg

Question 11

54 / 3 x 8, or equivalent complete method to find the whole number	**M1**
144 identified as the number	**A1**
5/6 x 144, ft from the number found	**M1**
120 cao	**A1**

Answer: 120

Question 12

fraction not arriving before midday found, e.g. 1 - 1/4 = 3/4	**M1**
fraction arriving midday to 3pm found in terms of the whole, e.g. 3/7 x 3/4 = 9/28	**M1**
fraction arriving after 3pm found, e.g. 3/4 - 9/28 = 3/7	**M1**
equation set up correctly, e.g. 3/7 x T = 96	**M1**
224 cao	**A1**

Answer: 224 visitors

Question 13

5/6 - 3/8 (= 11/24) evaluated correctly	**M1**
7/9 + 1/3 (= 10/9) evaluated correctly	**M1**
11/24 x 9/10 seen (flip and multiply)	**M1**
33/80 cao	**A1**

Answer: 33/80

Question 14

11/17 cao	**B1**
13/20 cao	**B1**
correct rule stated, e.g. nth term = (2n+1)/(3n+2) oe	**B1**

Answer: next terms: 11/17, 13/20; rule: nth term = (2n+1)/(3n+2)

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