2.3-4 Fractions: Practice Set 4: 30-minute Pack

Total Marks

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

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

Fractions: Practice Set 4

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A fourth 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) and EP.M47 (Fractions: Practice Set 3). 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 3 2/5 + 2 5/6, giving your answer as a mixed number in its simplest form.

(2)

2 Work out 6 1/4 - 2 5/9, giving your answer as a mixed number in its simplest form.

(2)

3 Work out 5/8 x 4/15, giving your answer in its simplest form.

(2)

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4 Work out 2 1/3 x 1 5/7, giving your answer in its simplest form.

(2)

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5 Find 7/15 of 225.

- ☐ A) 90
- ☐ B) 100
- ☐ C) 105
- ☐ D) 120
- ☐ E) 135

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6 Write 52/7 as a mixed number in its simplest form.

- ☐ A) 7 4/7
- ☐ B) 6 3/7
- ☐ C) 7 5/7
- ☐ D) 8 3/7
- ☐ E) 7 3/7

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7 Kwame has £120. He spends 2/5 of it on trainers. He then spends 1/4 of what remains on a football shirt. How much money does Kwame have left?

(3)

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8 3/7 of a number is 108. Find 5/6 of the same number.

(4)

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9 Show that 5/6 - 1/3 + 1/4 = 3/4

(3)

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10 Calculate (7/10 - 2/5) / (5/6 + 1/4), giving your answer as a fraction in its simplest form.

(4)

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11 A sequence of fractions begins 2/3, 5/8, 8/13, 11/18, ... Write the next two terms, and give a rule for the nth term.

(3)

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12 At a carnival in Ipswich, 3/10 of the visitors arrive before 1pm. Of the visitors who arrive at 1pm or later, 2/7 arrive between 1pm and 4pm, and the rest arrive after 4pm. Given that 150 visitors arrive after 4pm, work out the total number of visitors at the carnival.

(5)

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Mark scheme · 2.3-4 Fractions: Practice Set 4: 30-minute Pack

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

Question 1

both mixed numbers converted to a common denominator, e.g. 102/30 + 85/30	**M1**
6 7/30 cao	**A1**

Answer: 6 7/30

Question 2

both mixed numbers converted to a common denominator, e.g. 225/36 - 92/36	**M1**
3 25/36 cao	**A1**

Answer: 3 25/36

Question 3

5/8 x 4/15 = 20/120 seen (or equivalent unsimplified fraction)	**M1**
1/6 cao	**A1**

Answer: 1/6

Question 4

both mixed numbers converted to improper fractions and multiplied, e.g. 7/3 x 12/7 = 84/21	**M1**
4 cao	**A1**

Answer: 4

Question 5

225 / 15 (= 15) seen	**M1**
C) 105 cao	**A1**

Answer: C) 105

Question 6

E) 7 3/7 cao	**B1**

Answer: 7 3/7

Question 7

amount spent on trainers found, 2/5 x 120 = 48, and £72 remaining	**M1**
1/4 x 72 (= 18) found, ft from the remaining amount	**M1**
£54 cao	**A1**

Answer: £54

Question 8

108 / 3 x 7, or equivalent complete method to find the whole number	**M1**
252 identified as the number	**A1**
5/6 x 252, ft from the number found	**M1**
210 cao	**A1**

Answer: 210

Question 9

all three fractions converted to a common denominator, e.g. twelfths: 10/12 - 4/12 + 3/12	**M1**
correct combination shown, e.g. 10/12 - 4/12 + 3/12 = 9/12	**M1**
9/12 simplified to 3/4, completing the proof	**A1**

Answer: shown: 5/6 - 1/3 + 1/4 = 3/4

Question 10

7/10 - 2/5 (= 3/10) evaluated correctly	**M1**
5/6 + 1/4 (= 13/12) evaluated correctly	**M1**
3/10 x 12/13 seen (flip and multiply)	**M1**
18/65 cao	**A1**

Answer: 18/65

Question 11

14/23 cao	**B1**
17/28 cao	**B1**
correct rule stated, e.g. nth term = (3n-1)/(5n-2) oe	**B1**

Answer: next terms: 14/23, 17/28; rule: nth term = (3n-1)/(5n-2)

Question 12

fraction not arriving before 1pm found, e.g. 1 - 3/10 = 7/10	**M1**
fraction arriving 1pm to 4pm found in terms of the whole, e.g. 2/7 x 7/10 = 1/5	**M1**
fraction arriving after 4pm found, e.g. 7/10 - 1/5 = 1/2	**M1**
equation set up correctly, e.g. 1/2 x T = 150	**M1**
300 cao	**A1**

Answer: 300 visitors

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