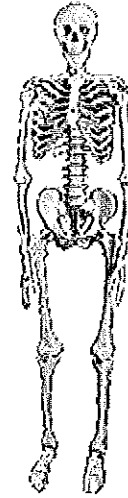


WORKSHEET 1 FRACTIONS AND PERCENTAGES - CHAPTER 9

WHY COULDN'T THE SKELETON GO TO THE DANCE?



1 Fill in the missing numerator.

(a) $\frac{2}{3} = \frac{\dots}{15}$

(b) $\frac{2}{5} = \frac{\dots}{15}$

(c) $\frac{3}{4} = \frac{\dots}{20}$

2 Fill in the missing denominator.

(a) $\frac{5}{8} = \frac{25}{\dots}$

(b) $\frac{7}{8} = \frac{14}{\dots}$

(c) $\frac{1}{9} = \frac{4}{\dots}$

3 Cancel down these improper fractions.

(a) $\frac{18}{12}$

(b) $\frac{24}{16}$

(c) $\frac{45}{20}$

4 Write these improper fractions as mixed numbers.

(a) $\frac{5}{2}$

(b) $\frac{13}{4}$

(c) $\frac{9}{5}$

5 Write these answers as a single fraction in its lowest terms.

(a) $\frac{1}{2} - \frac{1}{3} =$

(b) $\frac{1}{3} + \frac{1}{4} =$

(c) $\frac{2}{3} - \frac{1}{2} =$

6 My truck used one third of a tank of diesel on the first delivery and two fifths of a tank on the second delivery. If I started with a full tank, what fraction of the tank remains?

7 Simplify (a) $2\frac{1}{5} + 3\frac{3}{4}$

(b) $4\frac{1}{3} - 1\frac{3}{5}$

8 Simplify $3\frac{2}{5} + 2\frac{1}{4} - 1\frac{7}{8}$

9 Calculate these products. (a) $\frac{2}{9} \times \frac{3}{4}$

(b) $3\frac{1}{4} \times 1\frac{1}{3}$

10 Calculate these quotients (a) $\frac{3}{4} \div \frac{4}{5}$

(b) $2\frac{1}{2} \div 1\frac{1}{4}$

11 Write these fractions as percentages (a) $\frac{4}{5}$

(b) $\frac{1}{10}$

(c) $\frac{1}{20}$

12 There are 30 empty seats on a train that seats 80. What percentage of the train is full?

13 (a) The alarm system in our car only draws about 0.1 amps when the engine is off. The battery can supply about 80 amps for 1 hour. How long can I leave the car without running the engine before the alarm system completely flattens the battery?

(b) A packet of breakfast cereal states that the contents may settle by up to 10% after shipping. The packet originally contained 2500 cubic cm but now only contains 2300 cubic cm. Explain whether or not the packet is within the range specified.

(c) According to the mixing instructions on a bottle of green cordial, for a single glass you need to mix $\frac{1}{6}$ of a glass of cordial and top up with water. How many glasses of pure cordial do I need to mix in a bottle in order to make 15 glasses of fruit drink?

14 (a) David can paint a billboard in 6 hours. His co-worker, Jo, can paint the same billboard in 9 hours. How long will it take them if they work together on the billboard, assuming that they both work at the same rate?

(b) The kids at Kaylene's Kindy have 34 toys to ride on. Some of these are scooters and some are tricycles. Altogether, Kaylene's bike technician checks 74 tyres every day. How many tricycles are there?

15 Sid brought over a large and a small bowl of prawns for lunch. Edgar ate 60% of the large bowl and 20% of the small bowl. In fact he ate 50% of all the prawns. If there were 30 prawns in the large bowl, how many were in the small bowl?

Answers:

A	B	C	D	E	G	H	N	O
$\frac{4}{15}$	62.5%	4 0 1 6 3 6	800 Hours Yes > 2250 cc $2\frac{1}{2}$	$\frac{3}{2}$, $\frac{3}{2}$, $\frac{9}{4}$	$3\frac{31}{40}$	3 hrs 36 min 6 Tricycles	10 6 15	$\frac{1}{6}$, $\frac{7}{12}$, $\frac{1}{6}$

S	T	U	W	Y	I
$5\frac{19}{20}$, $2\frac{11}{15}$	$2\frac{1}{2}$, $3\frac{1}{4}$, $1\frac{4}{5}$	$\frac{1}{6}$, $4\frac{1}{3}$	$\frac{15}{16}$, 2	80% 10% 5%	10

$\frac{12}{14}$ $\frac{3}{14}$ $\frac{2}{14}$ $\frac{6}{13}$ $\frac{9}{13}$ $\frac{7}{13}$ $\frac{3}{13}$ $\frac{14}{13}$ $\frac{3}{13}$ $\frac{14}{13}$ $\frac{6}{13}$ $\frac{13}{13}$ $\frac{1}{13}$ $\frac{5}{12}$ $\frac{12}{12}$ $\frac{5}{13}$ $\frac{13}{11}$ $\frac{11}{4}$ $\frac{5}{5}$ $\frac{8}{5}$ $\frac{5}{5}$

$\frac{10}{10}$ $\frac{15}{15}$ $\frac{4}{4}$ $\frac{14}{14}$

WORKSHEET 2 FRACTIONS AND PERCENTAGES - CHAPTER 9

WHY DID THE PIRATE PUT PENCILS IN WITH HIS TREASURE?



1 Change both of the given fractions into the same indicated denominator and state which is largest.

(a) $\frac{1}{2} = \frac{\dots}{6}$ and $\frac{1}{3} = \frac{\dots}{6}$ (b) $\frac{2}{3} = \frac{\dots}{12}$ and $\frac{3}{4} = \frac{\dots}{12}$

2 Insert either "<" or ">" to make a true statement.

(a) $\frac{5}{6}$ $\frac{4}{7}$ (b) $\frac{3}{5}$ $\frac{2}{3}$

3 Write the following mixed numbers as improper fractions.

(a) $3\frac{3}{4}$ (b) $5\frac{2}{11}$ (c) $7\frac{5}{8}$

4 Restate these quantities using mixed numbers.

- (a) 15 students are allocated to chess teams of 4 players each. Exactly how many teams?
(b) 160 minutes is exactly how many hours?
(c) 400 eggs packaged into half-dozen lots. How many packages?

5 Write these answers as a single fraction in its lowest terms.

(a) $\frac{5}{8} - \frac{1}{6}$ (b) $\frac{7}{8} - \frac{7}{12}$ (c) $\frac{3}{10} + \frac{4}{15}$

6 It has been found that approximately three fifths of the world's population live in a moderate climate while about 7 in every twenty live in a hot climate. What fraction of the world's population live in a cold climate?

7 Solve these mixed number problems.

(a) 9 litres of oil is to be added to a gearbox after servicing. If $3\frac{3}{4}$ litres have been added so far, how much remains to be added?

(b) A recipe requires $3\frac{1}{2}$ cups of sugar but we only have $2\frac{2}{3}$ cups in the cupboard. How much short of sugar are we?

8 Simplify $2\frac{3}{5} + 3\frac{3}{4} - 4\frac{5}{8}$

9 Calculate these products. (a) $\frac{3}{8} \times \frac{4}{5}$ (b) $2\frac{1}{4} \times 2\frac{2}{3}$

10 (a) Susanna has bought a new hiking water bottle that holds $2\frac{1}{2}$ Litres. If it takes $\frac{2}{5}$ of a litre of water to make a cup of soup, how many cups of soup can Susanna make from her bottle?

(b) A packet of breakfast cereal comes in a $1\frac{1}{2}$ kg box. According to the directions, there is 12 cups of cereal by volume to the kg. An average serve requires $1\frac{3}{4}$ cups of cereal. How many serves can we get from a box of cereal?

11 Our debating team has had 14 wins and 6 losses over the last 3 years. Express the wins and losses as percentages of the total debates contested.

12 Convert these percentages to fractions in their lowest terms.

(a) 24%

(b) 72%

(c) 15%

13 (a) Last week, there was an outbreak of 'flu in the school and only $\frac{2}{5}$ of the school attended for the entire week. If 240 students had at least one day off, how many students are there in the school?

(b) Each gram of shampoo contains 0.15 gm of active ingredient. If I rinse out 90% of the shampoo, how much active ingredient do I get when I apply 30 gram of shampoo to my hair?

14 (a) What is the last decimal place in $(0.3)^{50}$

(b) Which whole number placed in the box would make a result closest to $3\frac{1}{2}$?

$$\frac{19}{\boxed{\quad}}$$

Answers:

A	C	D	E	H	K	M	N	O
$1\frac{39}{40}$	70% 30%	$5\frac{1}{4}, \frac{5}{6}$	$\frac{15}{4}, \frac{57}{11}, \frac{61}{8}$	$\frac{11}{24}, \frac{7}{24}, \frac{17}{30}$	$\frac{3}{10}, 6$	$\frac{1}{20}$	$\frac{9}{5}$	$3\frac{3}{4}, 2\frac{2}{3}, 66\frac{2}{3}$

R	S	T	W	F
$6\frac{1}{4}, 10\frac{2}{7}$	$\frac{6}{25}, \frac{18}{25}, \frac{3}{20}$	$\frac{5}{6} > \frac{4}{7}$ $\frac{3}{5} < \frac{2}{3}$	400 0.45 g	$\frac{1}{2}, \frac{3}{4}$

$\frac{5}{3}, \frac{13}{8}, \frac{14}{2}, \frac{3}{7}, \frac{2}{4}, \frac{6}{8}, \frac{9}{3}, \frac{8}{8}, \frac{11}{5}, \frac{3}{3}, \frac{12}{2}$

$\frac{4}{1}, \frac{7}{10}, \frac{8}{13}, \frac{3}{10}, \frac{10}{12}$

WORKSHEET 3 FRACTIONS AND PERCENTAGES - CHAPTER 9

WHEN DID THE CATERPILLAR DECIDE TO BECOME A BUTTERFLY?



1 Cancel these fractions down to their lowest terms.

(a) $\frac{36}{80}$

(b) $\frac{20}{45}$

(c) $\frac{240}{600}$

2 What fraction (in its lowest terms) is:

(a) Three months in a year?

(b) 12 holes on a championship golf course?

(c) 8 hours at work each day?

3 Write True or False for these fraction statements.

(a) All proper fractions are less than 1. True or False?

(b) $1\frac{3}{5} > \frac{8}{5}$. True or False?

(c) In an improper fraction, the denominator is bigger than the numerator. True or False?

4 Divide this set of numbers into 3 groups. Proper fractions, improper fractions, and mixed

numbers. $\left\{ \frac{3}{4}, \frac{7}{5}, \frac{143}{7}, \frac{1}{5}, 2\frac{1}{3}, \frac{3}{8}, \frac{11}{5}, \frac{5}{2}, 6\frac{1}{4}, 2\frac{5}{6} \right\}$

5 Arrange these fractions in order of magnitude from smallest to largest.

(a) $\frac{3}{4}, \frac{3}{5}, \frac{7}{10}$

(b) $\frac{2}{5}, \frac{1}{3}, \frac{3}{8}$

(c) $\frac{1}{2}, \frac{4}{7}, \frac{3}{8}$

6 Find a fraction in its lowest terms that lies in between the two fractions $\frac{3}{4}$ and $\frac{4}{5}$.

7 Calculate the answers to the following mixed number problems.

(a) $2\frac{1}{2} + 5\frac{3}{4} - 4\frac{2}{3}$

(b) $9 - 5\frac{2}{3} + 2\frac{3}{5}$

8 Multiply these mixed numbers.

(a) $2\frac{1}{2} \times 3\frac{1}{3}$

(b) $\left(1\frac{1}{4}\right)^2$

(c) $\left(6\frac{1}{2}\right)^2$

9 Calculate the quotient for these division problems.

(a) $1\frac{2}{5} \div \frac{3}{4}$

(b) $1\frac{3}{4} \div 2\frac{1}{3}$

(c) $2\frac{1}{2} \div 1\frac{3}{4}$

10 Nerilee is going to stay at her brother's farm for $3\frac{1}{2}$ weeks at Christmas time. She is hoping the outdoor life will help her lose $5\frac{1}{2}$ kg while she is there. How much weight will she need to lose each week to accomplish this? (Answer as a fraction).

11(a) 65% of drinkers interviewed admitted they had thought about giving up at some time. What fraction of drinkers had never thought about giving up?

(b) Of the 8 students elected to the student council, 5 of them were girls. What percentage is this?

12 Find a quick method in mental arithmetic for doing these calculations.

(a) 16% of 25 minutes. (b) 30% of 5 thousand tonnes. (c) 35% of 20 Litres.

13 Calculate the required percentages of these quantities.

(a) 70% of 40 metres (b) 40% of 30 minutes (c) 15% of 60 grams

14 (a) I seem to overspend. I need to decrease my spending by 20% to break even or increase my income. By what rate should I increase my income if I want to break even?

(b) In a bag of black and white marbles, one quarter of them are white. I add 5 of each colour. Now one third of them are white. How many of each colour did I start with?

Answers:

A	D	E	F	H	L	N	O
$\frac{31}{40}$	25% 10 B 30 W	$1\frac{13}{15}, \frac{3}{4}, 1\frac{3}{7}$	$\frac{1}{4}, \frac{2}{3}, \frac{1}{3}$	$8\frac{1}{3}, 1\frac{9}{16}, 42\frac{1}{4}$	28 m 12 min 9 g	$\frac{7}{11}$	$\frac{7}{20},$ 67.5%

R	T	U	V	W	.
4 min 1500 tonnes 7 Litres	$\frac{3}{5}, \frac{7}{10}, \frac{3}{4}$ $\frac{1}{3}, \frac{3}{8}, \frac{2}{5}$ $\frac{3}{8}, \frac{1}{2}, \frac{4}{7}$	$\left\{ \frac{3}{4}, \frac{1}{5}, \frac{3}{8} \right\}$ $\left\{ \frac{7}{5}, \frac{143}{7}, \frac{11}{5}, \frac{5}{2} \right\}$ $\left\{ 2\frac{1}{3}, 6\frac{1}{4}, 2\frac{5}{6} \right\}$	$3\frac{7}{12}, 5\frac{14}{15}$	True False True	$\frac{9}{20}, \frac{4}{9}, \frac{2}{5}$

$\frac{3}{8} \frac{9}{10} \frac{8}{9} \frac{5}{4} \frac{12}{10} \frac{9}{14} \frac{11}{7} \frac{9}{12} \frac{6}{10} \frac{9}{3}$

$\frac{13}{9} \frac{6}{2} \frac{1}{1}$