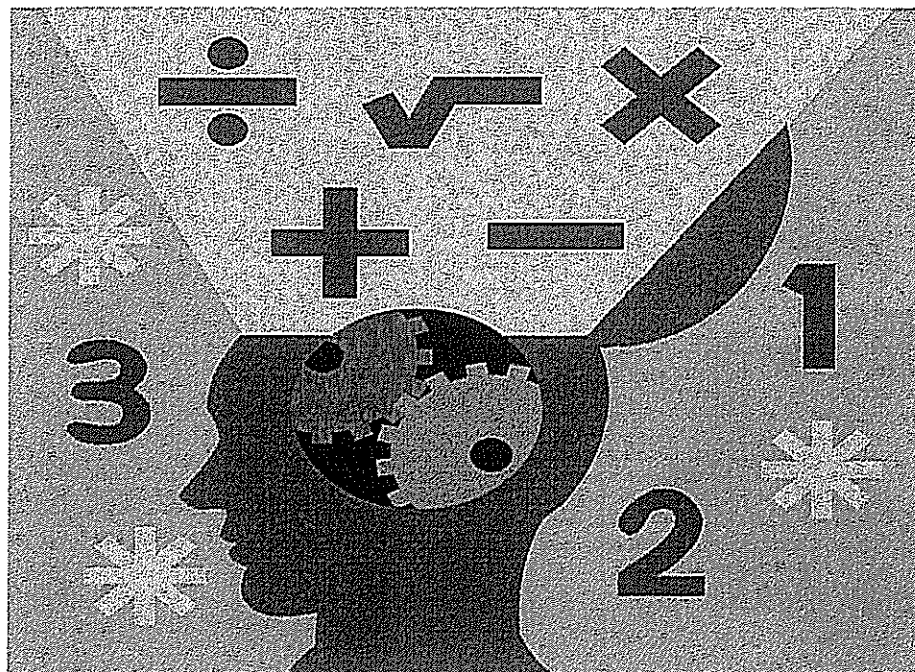


**YEAR 7
HOMEWORK
BOOKLET
TERM 2**



Chapter review

Skills: Knowledge, Literacy

Unit 4.1: Why classify?

Clue	Word
1 A type of key with two choices at each branch	d i c h o t o m o u s ✓
2 Process of putting similar things in groups	cl i f i c a t i o n
3 Representation of a classification system	k e y

Unit 4.2: Living or non-living?

Clue	Word
1 Typical qualities of something	char a c t e r i s t i c s
2 Reaction that produces energy	ce l l u l a r r e p r o d u c t i o n
3 Produces its own food	h o m o t r o p h
4 Feeds on other plants and animals	h e t e r o t r o p h
5 Reaction of plants to produce food	ph o t o s y n t h e s i s
6 Warm-blooded animal	h o m i o t h e r m
7 Cold-blooded animal	p o i k i l o t h e r m
8 Removal of wastes	e x c r e t i o n

Unit 4.3: From kingdom to species

Clue	Word
1 Person who puts things into groups	t a x o n o m i s t
2 Largest group of organisms	k i n g d o m
3 Small division of organisms	s p e c i e s
4 Cannot reproduce	a s e x u a l
5 Can reproduce	f e r t i l e

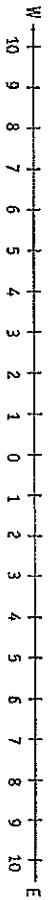
CHAPTER 8

Directed numbers

EXCEL YEAR 7 MATHEMATICS
Ch. 11.1, p. 168

Plotting on number lines

QUESTION 1 Giving distance and direction, write where you would be from your starting point if you travelled on the east-west line.



- a 4 km west and then 7 km east _____
- b 6 km west and then 11 km east _____
- c 2 km west and then 8 km east _____
- d 6 km east and then 7 km west _____
- e 2 km east and then 5 km east _____
- f 3 km west and then 6 km west _____

QUESTION 2 Plot the following sets of points on the number line.

- a {1, 3, 4, 6} _____
- b {0, 2, 5, 7} _____
- c {0, 2, 4, 6} _____
- d {1, 3, 5, 7} _____
- e {0, 1, 2, 3, 4} _____
- f {1, 5, 6, 7, 9} _____

QUESTION 3 Graph each set of points on a separate number line.

- a the numbers from 3 to 7 _____
- b the numbers 1, 2, 5, 6, 8, 9 _____
- c odd numbers less than 10 _____
- d even numbers less than 10 _____
- e prime numbers less than 10 _____
- f the numbers 2, 3, 4, 8, 9, 10 _____

Directed numbers

Opposite directions (negative numbers)

EXCEL YEAR 7 MATHEMATICS
Ch. 11.1, p. 168

QUESTION 1 What is the opposite of each of these statements?

- a going up _____ b going north _____
- c going east _____ d depositing money _____
- e winning \$50 _____ f five floors up _____
- g go below zero _____ h increase of 40 _____
- i 20 steps to the right _____ j 90 m above sea level _____

QUESTION 2 For each of the following statements, write a directed number to show the size and direction of the number.

- a Michelle Russett deposited \$120 _____
- b Tim Eastman walked 40 km east _____
- c The price came down by \$20 _____
- d Maddy took 65 steps forwards _____
- e The water level dropped by 3 m _____
- f I lost 8 points _____

QUESTION 3 Showing distance and direction, state where you would be from your starting point if you travelled:

- a 9 km east then 5 km west _____
- b 12 km west then 5 km east _____
- c 7 km north then 6 km south _____
- d 25 km east then 15 km west _____
- e 8 km east, 12 km west and then 7 km east _____

QUESTION 4 Write a number sentence for each of the following.

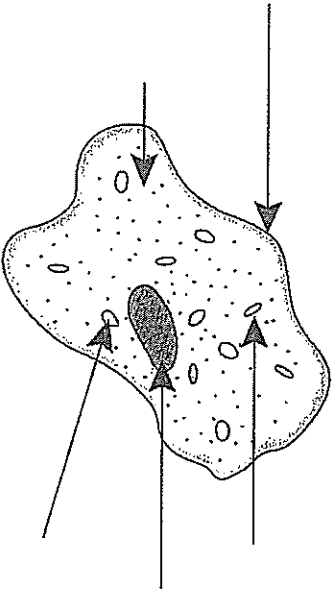
- a A deposit of \$30 and a deposit of \$25 _____
- b A deposit of \$100 and a withdrawal of \$18 _____
- c A withdrawal of \$20 and a deposit of \$65 _____
- d A deposit of \$15 and a deposit of \$20 _____
- e A withdrawal of \$9 and a withdrawal of \$12 _____
- f A deposit of \$30 and a deposit of \$70 _____
- g A withdrawal of \$18 and a deposit of \$30 _____
- h A deposit of \$55 and a deposit of \$17 _____
- i A deposit of \$83 and a withdrawal of \$28 _____
- j A withdrawal of \$50 and a withdrawal of \$60 _____

Bx1 Cell diagrams

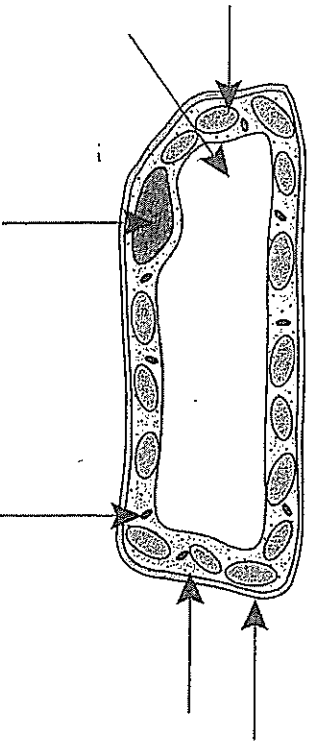
Plant and animal cells

Skill: Knowledge

1. Label each of the parts and identify the cell type.
2. In your workbook, briefly outline the function of each cell part.



_____ cell



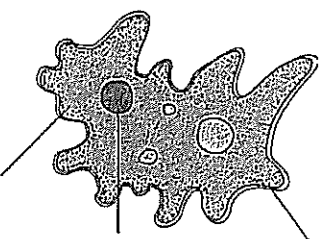
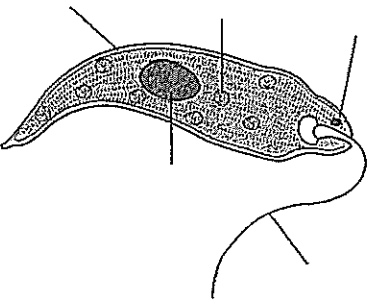
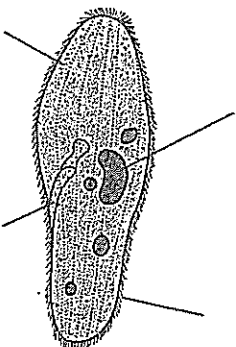
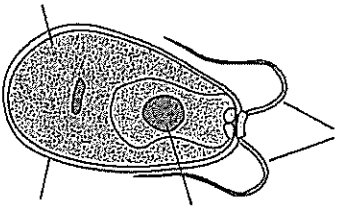
_____ cell

Bx2 Protists

Single-celled organisms

Skill: Knowledge

Label each of the parts and identify each protist.



Directed numbers

Addition of directed numbers

QUESTION 1 Find the sum of the following. Use the number line if necessary.

- a $+4 + +9 =$ _____ b $+1 + +2 =$ _____ c $+1 + +7 =$ _____
 d $+6 + +2 =$ _____ e $+3 + +6 =$ _____ f $+2 + +9 =$ _____
 g $+8 + +3 =$ _____ h $+2 + +4 =$ _____ i $+4 + +7 =$ _____

QUESTION 2 Find each sum.

- a $+1 + -1 =$ _____ b $+3 + -8 =$ _____ c $+5 + -9 =$ _____
 d $+2 + -3 =$ _____ e $+9 + -5 =$ _____ f $+8 + -6 =$ _____
 g $+4 + -2 =$ _____ h $+10 + -4 =$ _____ i $+7 + -7 =$ _____

QUESTION 3 Add the following.

- a $-9 + +1 =$ _____ b $-18 + +6 =$ _____ c $-15 + +11 =$ _____
 d $-10 + +3 =$ _____ e $-24 + +7 =$ _____ f $-17 + +4 =$ _____
 g $-12 + +5 =$ _____ h $-28 + +10 =$ _____ i $-7 + +15 =$ _____

QUESTION 4 Find the answers to these additions.

- a $-2 + -3 =$ _____ b $-7 + -1 =$ _____ c $-1 + -7 =$ _____
 d $-5 + -9 =$ _____ e $-3 + -2 =$ _____ f $-10 + -5 =$ _____
 g $-9 + -4 =$ _____ h $-8 + -10 =$ _____ i $-4 + -8 =$ _____
 j $-12 + -17 =$ _____ k $-6 + -14 =$ _____ l $-11 + -6 =$ _____

QUESTION 5 Find the values of the following.

- a $+6 + +2 + +5 =$ _____ b $+17 + -3 + -2 =$ _____ c $+10 + +2 + -3 =$ _____
 d $-18 + +8 =$ _____ e $-8 + -6 =$ _____ f $-20 + -5 =$ _____
 g $+7 + -4 + -1 =$ _____ h $-14 + +3 + +8 =$ _____ i $-9 + -6 =$ _____
 j $+10 + -5 + -3 =$ _____ k $+15 + -8 + -3 =$ _____ l $-8 + +4 =$ _____

QUESTION 6 Find the missing number.

- a $+4 +$ _____ $= +2$ b _____ $+ -5 = 0$ c $+10 + -3 =$ _____
 d $+8 +$ _____ $= +6$ e $+5 + -9 + -2 =$ _____ f $-7 + -8 =$ _____
 g $+9 + -6 =$ _____ h $+8 + +4 =$ _____ i $-4 +$ _____ $= -13$
 j $-10 +$ _____ $= -21$ k $-3 + -4 + -2 =$ _____ l $+15 + +6 =$ _____
 m $+15 + -3 + -4 =$ _____ n $-5 +$ _____ $= -18$

100

Directed numbers

Extending the number line

Use the number line to answer the following questions.



QUESTION 1 Represent each of the following trips on the number line using a directed number (a positive or negative number).

- a 0 to +7 _____ b +1 to +8 _____
 c -8 to +3 _____ d +3 to +9 _____
 e -2 to +5 _____ f -1 to +10 _____
 g +6 to +10 _____ h -8 to -1 _____
 i -7 to -3 _____ j -9 to +5 _____

QUESTION 2 Which is the smaller number?

- a +10 or +6 _____ b +8 or -1 _____ c -8 or -2 _____ d -2 or +2 _____
 e +6 or +1 _____ f -7 or -5 _____ g -3 or +7 _____ h +10 or +8 _____
 i -6 or -1 _____ j -4 or -2 _____ k -6 or +7 _____ l +8 or +9 _____
 m -8 or -1 _____ n -7 or +2 _____ o +2 or +8 _____

QUESTION 3 Use the number line to complete the following.

- a $5 - 8 =$ _____ b $4 + 7 =$ _____ c $6 + 3 =$ _____
 d $3 + 4 =$ _____ e $9 - 2 =$ _____ f $8 - 2 =$ _____
 g $-2 + 7 =$ _____ h $7 - 3 =$ _____ i $5 - 9 =$ _____
 j $4 - 8 =$ _____ k $8 - 10 =$ _____ l $-3 - 4 =$ _____

QUESTION 4 Arrange in descending order.

- a +2, +4, -2, -7, -0, -1 _____
 b -2, -8, -6, -9, 3, 5 _____
 c 8, 9, 3, 1, 2, -4 _____
 d -3, -5, 2, 6, 3, -1 _____
 e 2, 5, 8, -4, -2, -6 _____

QUESTION 5 Write > or < to make the following statements true.

- a 8 _____ -5 b 4 _____ -8 c 3 _____ -5
 d 6 _____ 9 e -5 _____ 5 f 4 _____ -9
 g -6 _____ 2 h -2 _____ 2 i 8 _____ 10
 j 9 _____ -4 k -7 _____ +3 l -2 _____ -7
 m -8 _____ -6 n -3 _____ +2 o -1 _____ 6

B.3 Cloning

The history of cloning

Skills: Interpreting, Analysis

Analyse the information below and answer the questions that follow.

1938	Just an idea	Han Spemann proposed a 'fantastical experiment' in which the nucleus from a cell is removed and inserted into an egg to make a clone.
1952	First cloning experiment with frogs	Robert Briggs and T.J. King added the nucleus from a frog embryo cell (an embryo is the first group of cells that grows after the egg and sperm join together) to a frog egg. No development.
1970	Second cloning experiment with frogs	John Gurdon tried the same procedure. The eggs developed into tadpoles but died after they were ready to begin feeding. This was a milestone because, even though the frogs never reached adulthood, he had replaced the nucleus of a frog egg with that of another cell from an adult frog.
1981	Cloning of mice	Karl Illmensee and Peter Hoppe reported that they had produced normal mice from mouse embryo cells. After a long inquiry, it was discovered that they had faked the results.
1982	Research starts	James McGrath and Davor Solter reported that they could not repeat the mouse-cloning experiment and concluded that mice cannot be used for cloning. Others confirmed their results.
1984	First embryo cloning with sheep	Steen Willadsen reported that he had cloned a live lamb from embryo cells. Others later replicated his experiment using a variety of animals, including cattle, pigs, goats, rabbits and rhesus monkeys.
1994	First cloning of more advanced embryo cells	Neal First cloned calves from embryos that had grown to at least 120 cells.
1996	Groundwork laid for cloning of adult sheep	Ian Wilmut repeated Dr First's experiment with sheep, but put embryo cells into a resting state before inserting their nuclei into sheep eggs. The eggs developed into normal embryos and then into lambs.
1997	Adult sheep cloned	Dr Wilmut reported that he had cloned a six-year-old adult sheep from an udder cell. Dolly, the cloned sheep, was the only one to survive from 277 eggs that had been joined with the adult sheep cells.
1997	Bull calf cloned	ABS Global Inc. produced 'Gene', a six-month-old bull calf, from its proprietary cloning technology. It also formed a company to clone animals for different purposes such as animal research.
2000	Animals cloned in Australia	'Malliké', a merino sheep, and 'Suzi', a calf, are the first cloned animals in Australia.
Today	Research goes on	Cloning research continues all over the world.

B.3 Cloning

page 2

The history of cloning

Skills: Interpreting, Analysis

Questions

- Calculate how many years passed between the 'idea of cloning' and the 'cloning of Dolly the sheep'.
- Explain why you think so many people are involved in a single scientific discovery.
- Propose a reason why you think a discovery like cloning takes so long to come about.
- Explain what an embryo is.
- The clones made in the years before Dolly were made using the nucleus of cells from embryos. Explain why Dolly was different from the clones that came before her.
- In 1952 and 1970, scientists tried to clone frogs. Explain the difference between the results of these experiments.
- In 1981 the cloning of mice was faked! Propose a reason why you think a scientist might want to fake their results.
- Identify the types of animals that were cloned in Australia, and the year in which this was done.
- Propose a benefit of cloning a merino sheep for Australian farmers.

Directed numbers



Subtraction of directed numbers

QUESTION 1 Find the answers to the following questions.

- | | | |
|---------------------|----------------------|----------------------|
| a $8 - 5 =$ _____ | b $10 - 7 =$ _____ | c $25 - 18 =$ _____ |
| d $+6 - +4 =$ _____ | e $+14 - +2 =$ _____ | f $+35 - +8 =$ _____ |
| g $+5 - +2 =$ _____ | h $+18 - +3 =$ _____ | i $+12 - +1 =$ _____ |
| j $+9 - +3 =$ _____ | k $+31 - +6 =$ _____ | l $+18 - +8 =$ _____ |

QUESTION 2 Complete these subtractions. Use the number line if necessary.

- | | | |
|----------------------|-----------------------|-----------------------|
| a $+6 - -2 =$ _____ | b $+18 - -6 =$ _____ | c $+27 - -10 =$ _____ |
| d $+10 - -3 =$ _____ | e $+25 - -12 =$ _____ | f $+14 - -7 =$ _____ |
| g $+11 - -4 =$ _____ | h $+9 - -11 =$ _____ | i $+19 - -9 =$ _____ |
| j $+15 - -5 =$ _____ | k $+8 - -8 =$ _____ | l $+32 - -13 =$ _____ |

QUESTION 3 Find each difference.

- | | | |
|-----------------------|-----------------------|-----------------------|
| a $-20 - +2 =$ _____ | b $-8 - +6 =$ _____ | c $-7 - +12 =$ _____ |
| d $-10 - +8 =$ _____ | e $-16 - +9 =$ _____ | f $-17 - +4 =$ _____ |
| g $-15 - +10 =$ _____ | h $-12 - +3 =$ _____ | i $-27 - +7 =$ _____ |
| j $-5 - +5 =$ _____ | k $-24 - +13 =$ _____ | l $-38 - +11 =$ _____ |

QUESTION 4 Find the answers to the following subtractions.

- | | | |
|----------------------|----------------------|----------------------|
| a $-3 - -1 =$ _____ | b $-2 - -5 =$ _____ | c $-13 - -8 =$ _____ |
| d $-5 - -6 =$ _____ | e $-8 - -2 =$ _____ | f $-6 - -3 =$ _____ |
| g $-7 - -10 =$ _____ | h $-12 - -7 =$ _____ | i $-15 - -9 =$ _____ |
| j $-9 - -12 =$ _____ | k $-11 - -4 =$ _____ | l $-4 - -11 =$ _____ |

QUESTION 5 Find the values of the following.

- | | | |
|-----------------------|-----------------------|-----------------------|
| a $-1 - -3 =$ _____ | b $-34 - +23 =$ _____ | c $-88 - +35 =$ _____ |
| d $-12 - -7 =$ _____ | e $+45 - -19 =$ _____ | f $-91 - -31 =$ _____ |
| g $-23 - +11 =$ _____ | h $-56 - -27 =$ _____ | i $+14 - -39 =$ _____ |
| j $-36 - -15 =$ _____ | k $+67 - +43 =$ _____ | l $-19 - -47 =$ _____ |

QUESTION 6 Simplify the following.

- | | | |
|------------------------|------------------------|-----------------------|
| a $9 - 4 =$ _____ | b $-23 - 10 =$ _____ | c $17 - 9 =$ _____ |
| d $-7 - (-6) =$ _____ | e $11 - (-14) =$ _____ | f $5 - (-12) =$ _____ |
| g $-11 - 8 =$ _____ | h $36 - (-6) =$ _____ | i $28 - 11 =$ _____ |
| j $-15 - (-9) =$ _____ | k $3 - 8 =$ _____ | l $2 - 17 =$ _____ |

CHAPTER 7

Length, mass and time

Most appropriate unit

EXCEL YEAR 7 MATHEMATICS
Ch. 3.1, p. 38

State the most appropriate unit (kilometres, metres or centimetres) for the following.

- The distance from Sydney to Melbourne.
- The length of your dining table.
- The height of a tower.
- The length of a road.
- Your own height.
- The height of a door.
- The length of a pencil.
- The length of a swimming pool.
- The thickness of your textbook.
- The width of your classroom.
- The length of a mobile phone.
- The length of your car.
- The diameter of a cricket ball.
- The height of a chair.
- The length of a soup spoon.

Length, mass and time

Conversion of units of length

EXCEL YEAR 7 MATHEMATICS
Ch. 3.1, p. 38

QUESTION 1 Convert the following to centimetres (cm).

- | | | | |
|-----------------|-----------------|------------------|-----------------|
| a 3 m = _____ | b 15 m = _____ | c 8 m = _____ | d 18 m = _____ |
| e 16 m = _____ | f 31 m = _____ | g 12 m = _____ | h 64 m = _____ |
| i 25 m = _____ | j 5 m = _____ | k 6 m = _____ | l 20 m = _____ |
| m 10 mm = _____ | n 90 mm = _____ | o 950 mm = _____ | p 28 mm = _____ |

QUESTION 2 Convert the following to metres (m).

- | | | | |
|-------------------|-------------------|-------------------|--------------------|
| a 300 cm = _____ | b 1400 cm = _____ | c 5000 cm = _____ | d 90 cm = _____ |
| e 800 cm = _____ | f 2100 cm = _____ | g 3600 cm = _____ | h 250 cm = _____ |
| i 2500 cm = _____ | j 840 cm = _____ | k 1675 cm = _____ | l 1260 cm = _____ |
| m 3 km = _____ | n 18 km = _____ | o 5.65 km = _____ | p 31.87 km = _____ |

QUESTION 3 Convert the following to millimetres (mm).

- | | | | |
|-----------------|-----------------|-------------------|-------------------|
| a 2 m = _____ | b 3.8 m = _____ | c 5.9 m = _____ | d 16.38 m = _____ |
| e 10 m = _____ | f 25 m = _____ | g 63.8 m = _____ | h 92.6 m = _____ |
| i 37 m = _____ | j 53 m = _____ | k 85.9 m = _____ | l 6.75 m = _____ |
| m 60 cm = _____ | n 92 cm = _____ | o 35.6 cm = _____ | p 38.9 cm = _____ |

QUESTION 4 Convert the following measurements to the units shown.

- | | | |
|----------------------|---------------------|---------------------|
| a 8 m = _____ cm | b 6000 mm = _____ m | c 9.82 km = _____ m |
| d 1236 mm = _____ cm | e 12.5 m = _____ mm | f 845 mm = _____ cm |
| g 9.36 cm = _____ mm | h 3.5 km = _____ m | i 13 m = _____ cm |
| j 900 cm = _____ mm | k 80 cm = _____ mm | l 92 m = _____ cm |

QUESTION 5 Complete the following conversions.

- | | | |
|---------------------|----------------------|--------------------|
| a 8 km = _____ m | b 8 dam = _____ m | c 9 dm = _____ cm |
| d 10.3 m = _____ cm | e 70 dm = _____ m | f 7 Mm = _____ m |
| g 12 dm = _____ m | h 33.58 m = _____ mm | i 80 m = _____ dam |
| j 14 dm = _____ cm | k 195 m = _____ cm | l 63 cm = _____ mm |

QUESTION 6 Complete the following.

- | | | |
|----------------------|---------------------|---------------------|
| a 58 dm = _____ cm | b 236 m = _____ cm | c 864 cm = _____ m |
| d 854 mm = _____ cm | e 280 m = _____ dam | f 56 hm = _____ m |
| g 4563 mm = _____ m | h 935 cm = _____ mm | i 15 Mm = _____ m |
| j 72.56 m = _____ mm | k 8.35 km = _____ m | l 8.35 m = _____ cm |

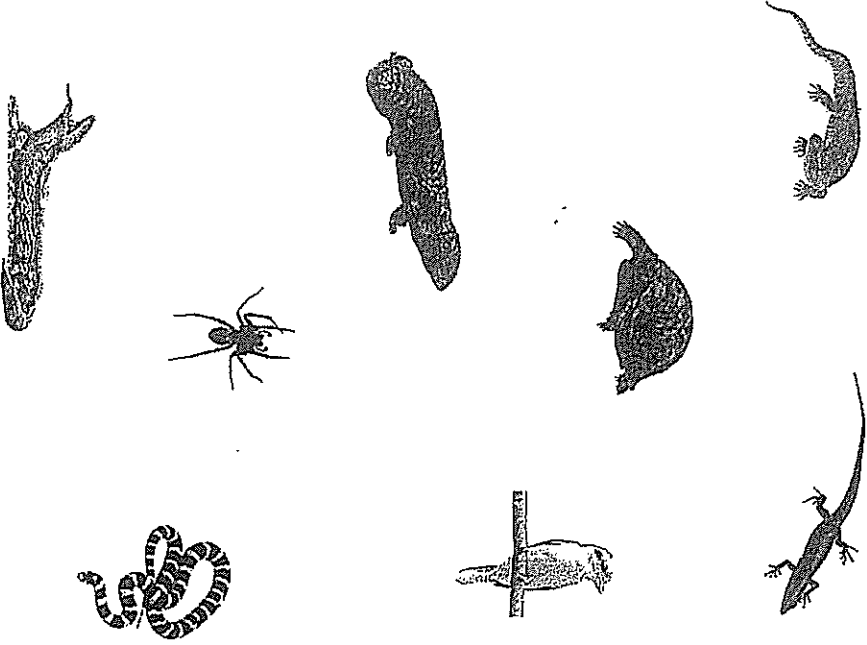
4.1 Sorting

From kingdom to species

Skills: Classifying, Identifying

Cutout the photos of the animals from this page and classify them by gluing them into the correct sections on page 2 of this worksheet. You might need to complete some research first to help identify the animals.

Hint: Each box should contain only one photo.



4.1 Sorting

From kingdom to species

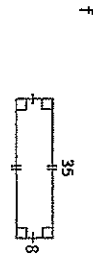
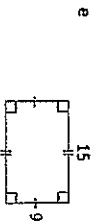
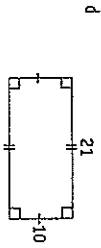
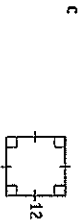
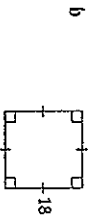
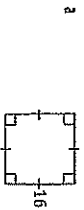
Skills: Classifying, Identifying

Kingdom	Animal Kingdom	
Phylum	Chordata (includes vertebrates)	
Class	Reptilia (reptiles)	
Order	Squamata (snakes, lizards)	
Suborder	Sauria (lizards)	
Family	Squamata (snakes)	
Genus	Tritonia (blue-tongued snakes)	
Species	Tritonia cristata (slimy lizard)	

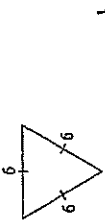
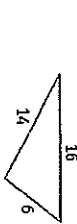
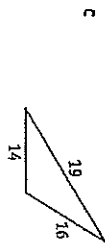
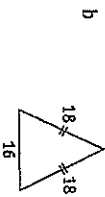
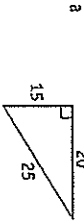
Length, mass and time

Perimeter of regular shapes

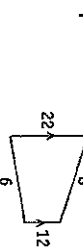
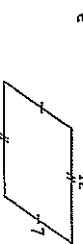
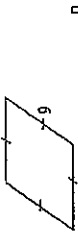
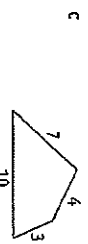
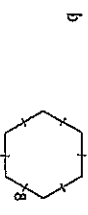
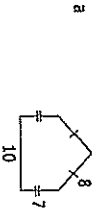
QUESTION 1 Find the perimeter of each shape. All measurements are in centimetres.



QUESTION 2 Find the perimeter of each triangle. All measurements are in centimetres.



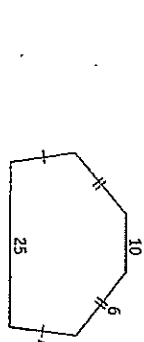
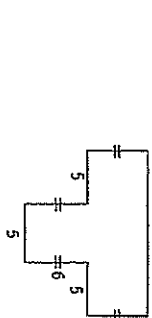
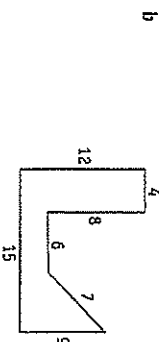
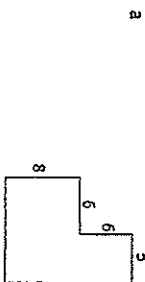
QUESTION 3 Find the perimeter of each shape. All measurements are in centimetres.



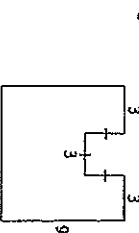
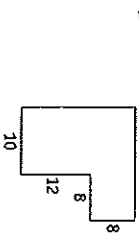
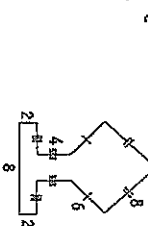
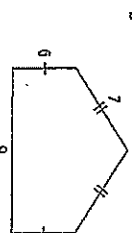
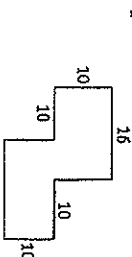
Length, mass and time

Perimeter of irregular shapes

QUESTION 1 Find the perimeter of the following shapes. All measurements are in centimetres.



QUESTION 2 Find the perimeter.



QUESTION 3

a If the perimeter of a square is 48 metres, find the length of each side.

b A room measures 9.86 metres long and 5.25 metres wide. Find the sum of the length and the width.

CHAPTER 3

Fractions

Equivalent fractions

QUESTION 1 Complete the following to make equivalent fractions.

a $\frac{1}{2} = \frac{3}{\quad}$

b $\frac{1}{3} = \frac{4}{\quad}$

c $\frac{1}{4} = \frac{5}{\quad}$

d $\frac{1}{5} = \frac{6}{\quad}$

e $\frac{2}{3} = \frac{6}{\quad}$

f $\frac{2}{5} = \frac{10}{\quad}$

g $\frac{2}{7} = \frac{8}{\quad}$

h $\frac{2}{9} = \frac{14}{\quad}$

i $\frac{3}{10} = \frac{9}{\quad}$

j $\frac{3}{11} = \frac{\quad}{22}$

k $\frac{3}{14} = \frac{\quad}{42}$

l $\frac{3}{16} = \frac{15}{\quad}$

QUESTION 2 Find the missing number to complete the sentence.

a $\frac{10}{30} = \frac{\quad}{3}$

b $\frac{12}{48} = \frac{1}{\quad}$

c $\frac{5}{35} = \frac{1}{\quad}$

d $\frac{8}{72} = \frac{1}{\quad}$

e $\frac{18}{54} = \frac{1}{\quad}$

f $\frac{12}{36} = \frac{3}{\quad}$

g $\frac{4}{9} = \frac{28}{\quad}$

h $\frac{3}{6} = \frac{15}{\quad}$

i $\frac{4}{7} = \frac{36}{\quad}$

j $\frac{2}{11} = \frac{14}{\quad}$

k $\frac{3}{5} = \frac{27}{\quad}$

l $\frac{4}{13} = \frac{\quad}{52}$

QUESTION 3 Complete these equivalent fractions.

a $\frac{2}{5} = \frac{24}{\quad}$

b $\frac{\quad}{96} = \frac{7}{24}$

c $\frac{3}{7} = \frac{\quad}{140}$

d $\frac{5}{12} = \frac{\quad}{96}$

e $\frac{2}{9} = \frac{30}{\quad}$

f $\frac{24}{\quad} = \frac{1}{3}$

g $\frac{5}{8} = \frac{\quad}{96}$

h $\frac{16}{20} = \frac{4}{\quad}$

i $\frac{3}{7} = \frac{33}{\quad}$

j $\frac{5}{12} = \frac{\quad}{120}$

k $\frac{2}{5} = \frac{\quad}{80}$

l $\frac{24}{36} = \frac{2}{\quad}$

QUESTION 4 Find the value of the letters.

a $\frac{x}{50} = \frac{7}{10}$ _____

b $\frac{a}{3} = \frac{9}{6}$ _____

c $\frac{b}{7} = \frac{8}{14}$ _____

d $\frac{c}{8} = \frac{6}{8}$ _____

e $\frac{3}{5} = \frac{x}{25}$ _____

f $\frac{m}{52} = \frac{8}{4}$ _____

g $\frac{n}{9} = \frac{7}{3}$ _____

h $\frac{p}{12} = \frac{18}{3}$ _____

i $\frac{3}{a} = \frac{6}{18}$ _____

j $\frac{5}{7} = \frac{a}{14}$ _____

k $\frac{t}{9} = \frac{1}{3}$ _____

l $\frac{y}{12} = \frac{5}{6}$ _____

m $\frac{4}{m} = \frac{2}{5}$ _____

n $\frac{3}{n} = \frac{6}{10}$ _____

o $\frac{8}{a} = \frac{2}{7}$ _____

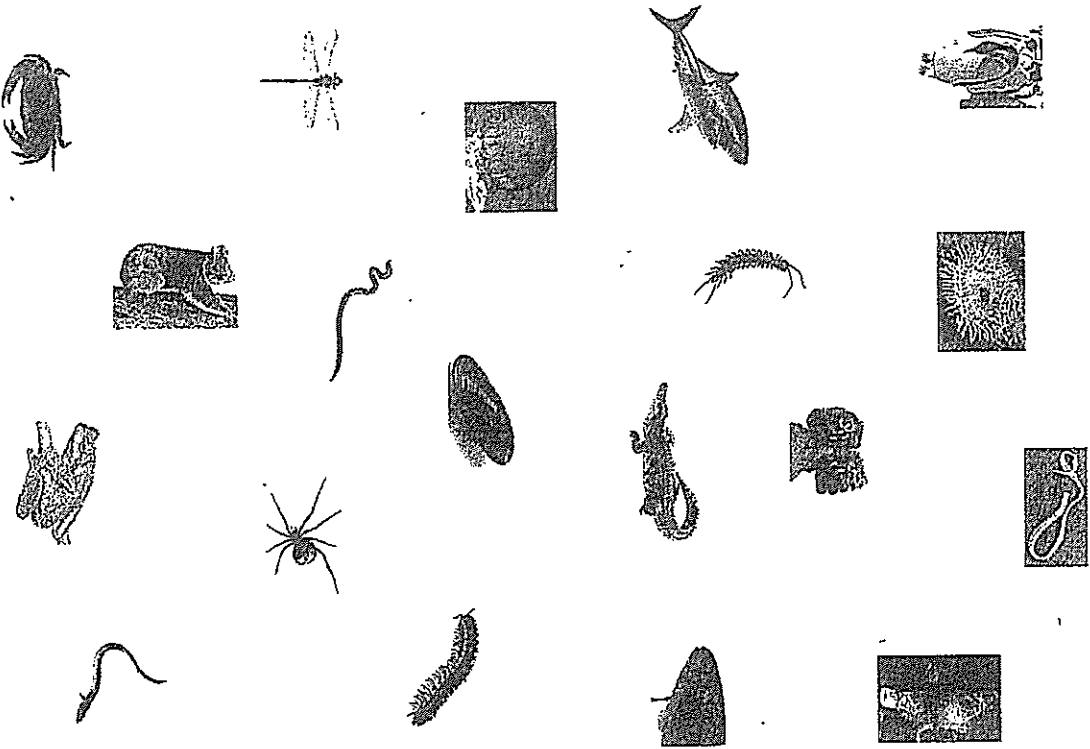
p $\frac{p}{5} = \frac{4}{10}$ _____

4x3 Classifying

Animal classification

Skills: Classifying, Identifying

Cut out the animals on this page, classify them and paste them into the table on the next page.



4x3 Classifying

Animal classification

Skills: Classifying, Identifying

Paste the animals from the previous page into the correct classification boxes below.

Vertebrates		Invertebrates				
		Fish	Reptiles	Amphibians	Arachnids	Insects
Mammals	Placental	Flatworms	Centipedes	Millipedes	Segmented worms	
	Monotremes		Arachnids	Crustaceans		
Birds	Bony	Jawless				
	Cartilaginous					

Fractions



Simplifying fractions

QUESTION 1 Write the following fractions in simplest form.

a $\frac{8}{12} = \underline{\hspace{2cm}}$

b $\frac{12}{64} = \underline{\hspace{2cm}}$

c $\frac{10}{150} = \underline{\hspace{2cm}}$

d $\frac{25}{75} = \underline{\hspace{2cm}}$

e $\frac{25}{100} = \underline{\hspace{2cm}}$

f $\frac{5}{40} = \underline{\hspace{2cm}}$

g $\frac{8}{64} = \underline{\hspace{2cm}}$

h $\frac{9}{54} = \underline{\hspace{2cm}}$

i $\frac{52}{65} = \underline{\hspace{2cm}}$

j $\frac{24}{72} = \underline{\hspace{2cm}}$

k $\frac{36}{48} = \underline{\hspace{2cm}}$

l $\frac{32}{80} = \underline{\hspace{2cm}}$

QUESTION 2 Write in simplest form.

a $\frac{10}{60} = \underline{\hspace{2cm}}$

b $\frac{20}{160} = \underline{\hspace{2cm}}$

c $\frac{30}{330} = \underline{\hspace{2cm}}$

d $\frac{40}{480} = \underline{\hspace{2cm}}$

e $\frac{8}{96} = \underline{\hspace{2cm}}$

f $\frac{10}{130} = \underline{\hspace{2cm}}$

g $\frac{12}{144} = \underline{\hspace{2cm}}$

h $\frac{14}{112} = \underline{\hspace{2cm}}$

i $\frac{7}{63} = \underline{\hspace{2cm}}$

j $\frac{9}{72} = \underline{\hspace{2cm}}$

k $\frac{11}{132} = \underline{\hspace{2cm}}$

l $\frac{13}{104} = \underline{\hspace{2cm}}$

QUESTION 3 Simplify the following fractions.

a $\frac{24}{216} = \underline{\hspace{2cm}}$

b $\frac{32}{96} = \underline{\hspace{2cm}}$

c $\frac{48}{240} = \underline{\hspace{2cm}}$

d $\frac{54}{324} = \underline{\hspace{2cm}}$

e $\frac{90}{720} = \underline{\hspace{2cm}}$

f $\frac{36}{324} = \underline{\hspace{2cm}}$

g $\frac{42}{336} = \underline{\hspace{2cm}}$

h $\frac{24}{120} = \underline{\hspace{2cm}}$

i $\frac{64}{704} = \underline{\hspace{2cm}}$

j $\frac{63}{189} = \underline{\hspace{2cm}}$

k $\frac{81}{324} = \underline{\hspace{2cm}}$

l $\frac{108}{324} = \underline{\hspace{2cm}}$

QUESTION 4 Write in simplest form, leaving as mixed numbers.

a $3\frac{8}{10} = \underline{\hspace{2cm}}$

b $5\frac{6}{30} = \underline{\hspace{2cm}}$

c $6\frac{5}{15} = \underline{\hspace{2cm}}$

d $8\frac{3}{12} = \underline{\hspace{2cm}}$

e $9\frac{4}{16} = \underline{\hspace{2cm}}$

f $7\frac{3}{9} = \underline{\hspace{2cm}}$

g $9\frac{14}{16} = \underline{\hspace{2cm}}$

h $12\frac{6}{18} = \underline{\hspace{2cm}}$

i $15\frac{8}{24} = \underline{\hspace{2cm}}$

j $16\frac{3}{27} = \underline{\hspace{2cm}}$

k $4\frac{12}{32} = \underline{\hspace{2cm}}$

l $7\frac{8}{12} = \underline{\hspace{2cm}}$

m $16\frac{4}{12} = \underline{\hspace{2cm}}$

n $15\frac{16}{24} = \underline{\hspace{2cm}}$

o $18\frac{3}{6} = \underline{\hspace{2cm}}$

p $5\frac{6}{18} = \underline{\hspace{2cm}}$

Fractions

Proper fractions, improper fractions and mixed numbers

QUESTION 1 Write whether each fraction is proper, improper or a mixed number.

a $2\frac{1}{3}$ _____ b $\frac{120}{9}$ _____ c $5\frac{1}{20}$ _____ d $\frac{9}{10}$ _____

e $\frac{3}{5}$ _____ f $\frac{5}{12}$ _____ g $\frac{8}{9}$ _____ h $\frac{15}{2}$ _____

i $\frac{8}{3}$ _____ j $3\frac{2}{5}$ _____ k $2\frac{15}{16}$ _____ l $\frac{8}{8}$ _____

QUESTION 2 Write each mixed number as an improper fraction.

a $2\frac{1}{5} =$ _____ b $8\frac{1}{10} =$ _____ c $1\frac{1}{2} =$ _____ d $2\frac{1}{4} =$ _____

e $3\frac{2}{5} =$ _____ f $9\frac{4}{7} =$ _____ g $5\frac{9}{10} =$ _____ h $2\frac{8}{9} =$ _____

i $4\frac{5}{6} =$ _____ j $6\frac{3}{8} =$ _____ k $6\frac{3}{5} =$ _____ l $5\frac{7}{10} =$ _____

QUESTION 3 Write each improper fraction as a mixed number.

a $\frac{24}{7} =$ _____ b $\frac{8}{3} =$ _____ c $\frac{19}{5} =$ _____ d $\frac{28}{11} =$ _____

e $\frac{63}{10} =$ _____ f $\frac{58}{7} =$ _____ g $\frac{93}{15} =$ _____ h $\frac{69}{12} =$ _____

i $\frac{53}{16} =$ _____ j $\frac{88}{7} =$ _____ k $\frac{153}{10} =$ _____ l $\frac{98}{9} =$ _____

QUESTION 4 Change these improper fractions to mixed numbers.

a $\frac{28}{5} =$ _____ b $\frac{12}{5} =$ _____ c $\frac{93}{16} =$ _____ d $\frac{38}{7} =$ _____

e $\frac{37}{7} =$ _____ f $\frac{64}{10} =$ _____ g $\frac{105}{24} =$ _____ h $\frac{46}{9} =$ _____

i $\frac{49}{8} =$ _____ j $\frac{73}{9} =$ _____ k $\frac{115}{20} =$ _____ l $\frac{56}{10} =$ _____

m $\frac{53}{9} =$ _____ n $\frac{85}{12} =$ _____ o $\frac{140}{11} =$ _____ p $\frac{68}{7} =$ _____

Fractions

EXCEL YEAR 7 MATHEMATICS
Ch. 5.6.1, 5.6.2, p. 72

Addition and subtraction of fractions with the same denominator

QUESTION 1 Add or subtract the following fractions.

- a $\frac{1}{5} + \frac{2}{5} =$ _____
- b $\frac{3}{10} + \frac{4}{10} =$ _____
- c $\frac{1}{9} + \frac{3}{9} =$ _____
- d $\frac{2}{8} + \frac{1}{8} =$ _____
- e $\frac{3}{20} + \frac{4}{20} =$ _____
- f $\frac{2}{7} + \frac{1}{7} =$ _____
- g $\frac{5}{8} - \frac{2}{8} =$ _____
- h $\frac{7}{13} - \frac{2}{13} =$ _____
- i $\frac{8}{17} - \frac{5}{17} =$ _____

QUESTION 2 Find these sums.

- a $\frac{2}{10} + \frac{5}{10} =$ _____
- b $\frac{3}{7} + \frac{1}{7} =$ _____
- c $\frac{5}{8} + \frac{3}{8} =$ _____
- d $\frac{9}{24} + \frac{2}{24} =$ _____
- e $\frac{6}{13} + \frac{1}{13} =$ _____
- f $\frac{8}{15} + \frac{2}{15} =$ _____
- g $\frac{6}{17} + \frac{5}{17} =$ _____
- h $\frac{12}{35} + \frac{12}{35} =$ _____
- i $\frac{8}{27} + \frac{2}{27} =$ _____

QUESTION 3 Find these differences.

- a $\frac{9}{15} - \frac{7}{15} =$ _____
- b $\frac{6}{13} - \frac{2}{13} =$ _____
- c $\frac{8}{25} - \frac{6}{25} =$ _____
- d $\frac{9}{38} - \frac{5}{38} =$ _____
- e $\frac{6}{49} - \frac{3}{49} =$ _____
- f $\frac{5}{16} - \frac{3}{16} =$ _____
- g $\frac{8}{27} - \frac{7}{27} =$ _____
- h $\frac{5}{38} - \frac{3}{38} =$ _____
- i $\frac{6}{25} - \frac{3}{25} =$ _____

QUESTION 4 Add or subtract, giving the answers in mixed numbers.

- a $\frac{45}{36} - \frac{2}{36} =$ _____
- b $\frac{8}{10} + \frac{11}{10} =$ _____
- c $\frac{3}{7} + \frac{9}{7} =$ _____
- d $\frac{5}{11} + \frac{9}{11} =$ _____
- e $\frac{8}{25} + \frac{24}{25} =$ _____
- f $\frac{23}{12} - \frac{4}{12} =$ _____
- g $\frac{49}{15} - \frac{12}{15} =$ _____
- h $\frac{19}{5} - \frac{12}{5} =$ _____
- i $\frac{16}{5} - \frac{2}{5} =$ _____
- j $\frac{28}{12} - \frac{2}{12} =$ _____
- k $\frac{361}{200} - \frac{25}{200} =$ _____
- l $\frac{27}{12} - \frac{7}{12} =$ _____

Fractions

EXCEL YEAR 7 MATHEMATICS
Ch. 5.6.1, 5.6.2, p. 72

Addition and subtraction of fractions with different denominators

QUESTION 1 Add or subtract the following fractions.

- a $\frac{1}{2} + \frac{1}{4} =$ _____
- b $\frac{1}{3} + \frac{1}{5} =$ _____
- c $\frac{1}{8} + \frac{1}{24} =$ _____
- d $\frac{3}{4} - \frac{1}{2} =$ _____
- e $\frac{5}{6} - \frac{2}{3} =$ _____
- f $\frac{2}{5} - \frac{1}{10} =$ _____
- g $\frac{1}{8} + \frac{1}{4} =$ _____
- h $\frac{3}{4} - \frac{1}{3} =$ _____
- i $\frac{1}{6} - \frac{1}{12} =$ _____

QUESTION 2 Find these sums and differences.

- a $\frac{3}{8} + \frac{2}{5} =$ _____
- b $\frac{8}{15} + \frac{3}{15} =$ _____
- c $\frac{5}{9} - \frac{1}{3} =$ _____
- d $\frac{6}{7} + \frac{2}{3} =$ _____
- e $\frac{4}{15} + \frac{1}{5} =$ _____
- f $\frac{3}{4} + \frac{2}{5} =$ _____
- g $\frac{7}{9} + \frac{5}{7} =$ _____
- h $\frac{4}{5} + \frac{6}{7} =$ _____
- i $\frac{3}{7} + \frac{2}{9} =$ _____

QUESTION 3 Find the value of the following.

- a $\frac{8}{15} + \frac{2}{3} =$ _____
- b $\frac{5}{6} - \frac{3}{4} =$ _____
- c $\frac{6}{7} - \frac{2}{21} =$ _____
- d $\frac{3}{20} + \frac{7}{50} =$ _____
- e $\frac{3}{25} - \frac{1}{5} =$ _____
- f $\frac{3}{8} + \frac{5}{24} =$ _____
- g $\frac{8}{12} + \frac{3}{24} =$ _____
- h $\frac{93}{100} - \frac{2}{5} =$ _____
- i $\frac{2}{3} + \frac{3}{4} =$ _____

QUESTION 4 Evaluate the following.

- a $\frac{6}{7} - \frac{5}{6} =$ _____
- b $\frac{18}{21} - \frac{3}{7} =$ _____
- c $\frac{2}{7} + \frac{3}{14} =$ _____
- d $\frac{3}{4} - \frac{1}{8} =$ _____
- e $\frac{5}{6} - \frac{2}{18} =$ _____
- f $\frac{1}{3} - \frac{1}{7} =$ _____
- g $\frac{8}{9} - \frac{2}{3} =$ _____
- h $\frac{11}{25} + \frac{1}{5} =$ _____
- i $\frac{8}{15} - \frac{2}{5} =$ _____
- j $\frac{7}{10} - \frac{2}{5} =$ _____
- k $\frac{9}{10} - \frac{2}{5} =$ _____
- l $\frac{9}{10} - \frac{3}{5} =$ _____

32

Fractions

Division of fractions

QUESTION 1 Divide the following fractions.

a $\frac{2}{5} \div \frac{1}{5} =$ _____

b $\frac{3}{7} \div \frac{3}{14} =$ _____

c $\frac{9}{10} \div \frac{3}{10} =$ _____

d $\frac{3}{4} \div \frac{1}{4} =$ _____

e $\frac{8}{9} \div \frac{2}{3} =$ _____

f $\frac{7}{8} \div \frac{2}{8} =$ _____

g $\frac{7}{8} \div \frac{3}{4} =$ _____

h $\frac{6}{15} \div \frac{3}{5} =$ _____

i $\frac{21}{100} \div \frac{7}{100} =$ _____

QUESTION 2 Find the answers to these divisions.

a $\frac{5}{6} \div \frac{3}{12} =$ _____

b $\frac{2}{9} \div \frac{9}{14} =$ _____

c $\frac{9}{10} \div \frac{3}{5} =$ _____

d $\frac{4}{5} \div \frac{3}{10} =$ _____

e $\frac{7}{100} \div \frac{3}{20} =$ _____

f $\frac{11}{100} \div \frac{33}{200} =$ _____

g $\frac{8}{15} \div \frac{2}{15} =$ _____

h $\frac{8}{27} \div \frac{4}{9} =$ _____

i $\frac{3}{8} \div \frac{9}{4} =$ _____

QUESTION 3 Work out the answers, as basic fractions, to the following.

a $\frac{5}{6} \div \frac{10}{18} =$ _____

b $\frac{7}{10} \div \frac{90}{100} =$ _____

c $\frac{16}{27} \div \frac{8}{54} =$ _____

d $\frac{3}{8} \div \frac{9}{16} =$ _____

e $\frac{15}{28} \div \frac{25}{42} =$ _____

f $\frac{18}{35} \div \frac{20}{49} =$ _____

g $\frac{5}{9} \div \frac{10}{18} =$ _____

h $\frac{8}{13} \div \frac{24}{39} =$ _____

i $\frac{16}{23} \div \frac{8}{46} =$ _____

j $\frac{8}{15} \div \frac{24}{25} =$ _____

k $\frac{9}{25} \div \frac{18}{50} =$ _____

l $\frac{48}{49} \div \frac{16}{7} =$ _____

QUESTION 4 Evaluate the following.

a $25 \div \frac{5}{9} =$ _____

b $26 \div \frac{13}{14} =$ _____

c $\frac{8}{36} \div 16 =$ _____

d $18 \div \frac{9}{7} =$ _____

e $\frac{4}{9} \div \frac{28}{27} =$ _____

f $28 \div \frac{56}{60} =$ _____

g $\frac{3}{4} \div \frac{12}{8} =$ _____

h $15 \div \frac{21}{10} =$ _____

i $96 \div \frac{16}{25} =$ _____

j $15 \div \frac{30}{38} =$ _____

k $\frac{9}{15} \div \frac{3}{5} =$ _____

l $\frac{9}{14} \div \frac{27}{28} =$ _____

34

Fractions

Multiplication of fractions

QUESTION 1 Multiply the following fractions.

a $\frac{1}{3} \times \frac{1}{3} =$ _____

b $\frac{2}{5} \times \frac{2}{5} =$ _____

c $\frac{3}{7} \times \frac{3}{7} =$ _____

d $\frac{1}{5} \times \frac{1}{15} =$ _____

e $\frac{3}{4} \times \frac{4}{5} =$ _____

f $\frac{5}{6} \times \frac{6}{7} =$ _____

g $\frac{1}{12} \times \frac{1}{12} =$ _____

h $\frac{3}{25} \times \frac{1}{4} =$ _____

i $\frac{1}{5} \times \frac{3}{7} =$ _____

QUESTION 2 Multiply these fractions.

a $\frac{1}{5} \times \frac{2}{9} =$ _____

b $\frac{3}{7} \times \frac{4}{8} =$ _____

c $\frac{5}{9} \times \frac{6}{7} =$ _____

d $\frac{1}{3} \times \frac{5}{7} =$ _____

e $\frac{6}{8} \times \frac{2}{3} =$ _____

f $\frac{3}{4} \times \frac{5}{9} =$ _____

g $\frac{8}{10} \times \frac{11}{10} =$ _____

h $\frac{9}{11} \times \frac{10}{11} =$ _____

i $\frac{3}{4} \times \frac{9}{11} =$ _____

QUESTION 3 Work out the answers, as basic fractions, for the following.

a $\frac{9}{20} \times \frac{3}{5} =$ _____

b $\frac{2}{3} \times \frac{15}{16} =$ _____

c $\frac{3}{4} \times \frac{9}{11} =$ _____

d $\frac{2}{3}$ of $\frac{8}{9} =$ _____

e $\frac{3}{4}$ of $\frac{16}{21} =$ _____

f $\frac{2}{5}$ of $\frac{25}{36} =$ _____

g $\frac{5}{6} \times \frac{18}{20} =$ _____

h $\frac{1}{5} \times \frac{15}{16} =$ _____

i $\frac{3}{7} \times \frac{21}{27} =$ _____

j $\frac{3}{10} \times \frac{20}{33} =$ _____

k $\frac{5}{6} \times \frac{18}{19} =$ _____

l $\frac{3}{7} \times \frac{24}{26} =$ _____

QUESTION 4 Simplify the following.

a $\frac{2}{3} \times 6 =$ _____

b $\frac{4}{9} \times 27 =$ _____

c $\frac{5}{6} \times 36 =$ _____

d $\frac{8}{9} \times 54 =$ _____

e $\frac{7}{10} \times 100 =$ _____

f $\frac{5}{8} \times 72 =$ _____

g $\frac{1}{5} \times 125 =$ _____

h $\frac{1}{4} \times 48 =$ _____

i $\frac{3}{7} \times 343 =$ _____

j $\frac{4}{5} \times 200 =$ _____

k $\frac{6}{13} \times 169 =$ _____

l $\frac{8}{9} \times 729 =$ _____