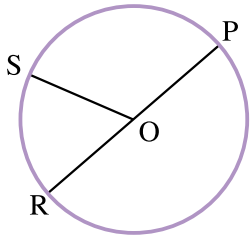
1 Circles (1)

Date: _____

Score: _____

Basic Questions

1. In the figure on the right, PR is a line segment. O is the centre of the circle.



(a) Write down all the radii of the circle: _____

(b) Write down all the diameters of the circle: _____

2. Fill in the blanks. Give the answer with a unit.

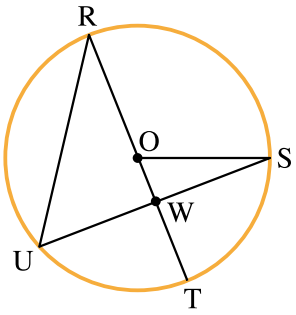
(a) The diameter of a circle is 72 mm. Its radius is _____.

(b) The radius of a circle is 55 m. Its diameter is _____.

Tips

Diameter = Radius × 2

3. In the figure on the right, OR and OS are radii of the circle.



(a) Point _____ is the centre of the circle.

(b) The lengths of OR and OS are * equal / not equal .
(* Circle the answer)

(c) * RU / RT / SU is the longest. (* Circle the answer)

4. Are the following descriptions correct? If so, put a '✓' in the box; if not, put a '✗' in the box.

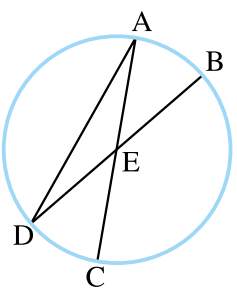
(a) Radius must pass through the centre of the circle. ☐

(b) Diameter is the longest line segment in a circle. ☐

(c) The length of a diameter is one-half of the length of a radius. ☐

(d) The length of a radius is equal to the distance between any two points on the circumference of the circle. ☐

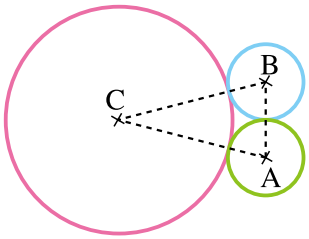
5. The figure on the right shows a circle. AEC and BED are diameters of the circle.



Triangle AED is a/an _____ triangle.

Questions

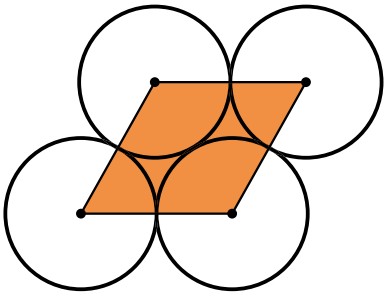
6.



The figure above is made up of 1 big circle and 2 identical small circles. A, B and C are the centres of the circles. The diameter of the big circle is 3 times that of each small circle. The radius of each small circle is 2 cm. The perimeter of triangle ABC is _____ cm.

7. In the figures below, the diameter of each circle is 6 cm. '•' is the centre of each circle. The coloured part is a quadrilateral.

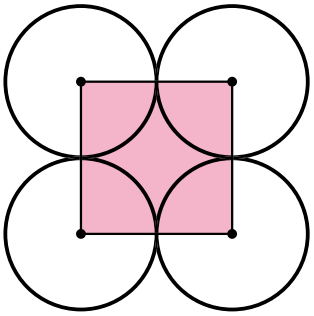
(a)



This quadrilateral is a _____.

Its perimeter is _____ cm.

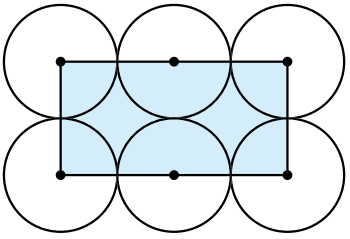
(b)



This quadrilateral is a _____.

Its area is_____ cm^2.

8. The figure on the right is made up of 6 circles of diameter 9 m each. The centres of the circles are joined to form a rectangle. Find the area of the rectangle. (Show your working)



Formative Assessment 2

Date: _____

Time: 20 min

Learning Objectives

① Division and mixed operations of fractions
② Algebraic expressions and simple equations
③ Volume

Self-Assessment
Correct
Incorrect

20 min

1. $6\frac{2}{5} \div 8 =$ ☐ ①

2. $1\frac{1}{2} \times 2\frac{4}{9} \div 2\frac{1}{5} =$ ☐ ①

3. Which of the following numbers times $\frac{3}{8}$ is equal to $4\frac{1}{2}$? ①

   ○ A. 7
   ○ B. 11
   ○ C. 12
   ○ D. 13

4. The perimeter of equilateral triangle A is $48\frac{3}{4}$ cm. It is 5 times that of equilateral triangle B.

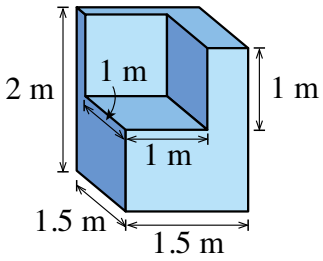
   (a) The side length of equilateral triangle A is ☐ cm. ①

   (b) The side length of equilateral triangle B is ☐ cm. ①

5. There are $1\frac{5}{8}$ kg of cola sweets and $1\frac{3}{4}$ kg of fruit juice sweets in a sweet shop. The shop assistant divides all these sweets into 9 portions equally. Each portion of sweets weighs ☐ kg. ①

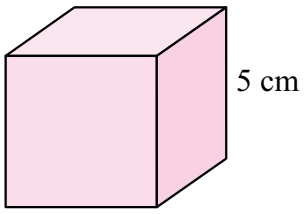
Self-Assessment
Correct
Incorrect
5 min

16.



Volume: _____ m^3 ③

17. If the side length of the cube on the right is increased to 8 cm, how many cubic centimetres will its volume be increased by? (Show your working) ③



Check

Self-Assessment Table

	Fair	Good	Great
① Division and mixed operations of fractions	(0–2)	(3–5)	(6–7)
② Algebraic expressions and simple equations	(0–2)	(3–5)	(6–7)
③ Volume	(0–2)	(3–5)	(6–7)

(Based on the number of questions that answered correctly, colour the appropriate face.)

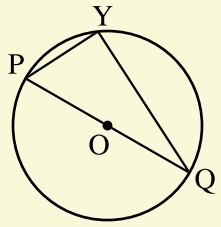
Challenging Common Mistakes

Date: _____

Challenge 1

1. In the figure below, O is the centre of the circle.

   Which line segment is a radius of the circle?



   - A. PQ
   - B. PO
   - C. QY
   - D. PY

Similar question: P.4 Q1

What's wrong?

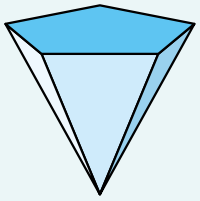
Some pupils confuse a diameter with a radius of a circle.

How to do it?

A line segment joining the centre and any point on the circumference is a radius of the circle.

Challenge 2

2.



The above 3-D shape has _____ vertices.

Similar question: P.10 Q1

What's wrong?

Some pupils fail to find the correct number of vertices of a pyramid.

How to do it?

Note that there is 1 vertex apart from the vertices on the base.

Challenge 3

3. The side length of a cube is 5 cm. What is its volume?

   - A. 25 cm^2
   - B. 25 cm^3
   - C. 125 cm^2
   - D. 125 cm^3

Similar question: P.34 Q3

What's wrong?

Some pupils confuse the unit of area (cm^2) with the unit of volume (cm^3).

How to do it?

Note that the unit of volume applies to 3-D shapes, so it has a '3' in the upper right corner.

Glossary

Circles

circle	圓
centre of a circle	圓心
radius (plural: radii)	半徑
diameter	直徑
circumference	圓周
a pair of compasses	圓規

Cross sections of 3-D shapes

3-D shape	立體圖形
cross section	截面
prism	角柱
cylinder	圓柱
pyramid	角錐
cone	圓錐
sphere	球
centre of a sphere	球心

3-D shapes

vertex (plural: vertices)	頂點
edge	稜
face	面
base	底
lateral face	側面
curve surface	曲面
cube	正方體
cuboid	長方體
net	摺紙圖樣

Multiplication of decimals

multiplication	乘法
product	積
P times Q	P 乘以 Q
decimal	小數
whole number	整數
is approximately equal to	大約等於
round off	四捨五入
round off to the nearest tenth	取至十分位
round off to the nearest hundredth	取至百分位

Unit Test
Algebraic expressions and simple equations

Name: _____
Class: _____ ( )
Date: _____
Time: 10 min

Learning Objectives

① Use algebraic expressions to represent the operations involving unknown quantities
② Solve simple equations and solve problems by using equations

Self-Assessment
Correct
Incorrect

1. Which of the following represents '10 plus h and then divided by 3'? (10 min) ☐ ①

○ A. $10 + \frac{h}{3}$ ○ B. $h + \frac{10}{3}$

○ C. $\frac{3}{10 + h}$ ○ D. $\frac{10 + h}{3}$

2. Mum pays 50 dollars for 2 hamburgers. How much change should she get? ☐ ①

$ m

○ A. $ $(2m - 50)$
○ B. $ $(50 - 2m)$
○ C. $ $2(50 - m)$
○ D. $ $2(m - 50)$

3. Mike has 22 dollars. Hugo has w dollars more than Mike. ☐ ①

They have _____ dollars altogether.

4. A small coach can carry q passengers. It carries 15 fewer passengers than a large coach. A travel agency rents 13 large coaches. ☐ ①

A total of _____ passengers can be carried.

5. Solve the following equation. ☐ ②

$\frac{t}{7} - 4 = 5$

$t =$ _____