NAME: _____

MATHEMATICS FORM 2

20 Questions (80 marks)

1. How would you describe this pattern's rule:

   a. -10, -5, 0, 5, … : _____ b. -1.6, 0.8, -0.4, 0.2,… : _____

[2 m]

2. Determine whether the following number lists is a sequence or not.

   a. 32, 36, 40, 44, 48, …. : _____ b. $\frac{2}{3}, 1\frac{1}{6}, 1\frac{2}{3}, 2\frac{1}{6}$: _____

[2 m]

3. Complete the following number sequence based on the given pattern.

   Add 8 to the previous number : 2, 10, 18, _____, _____, 42

[2 m]

4. Expand the following expressions.

   a. $3(5+7y)$ b. $(4+2s)(3+s)$

   = _____ + _____ = _____ + _____ + _____

[5 m]

5. Simplify (Drag and drop the answers).

$q(p+1)$	5	4	m^2	$22a$	$3p$	$6a^2$

   a. $(2a-4)(3a-1)-8a =$ _____ − _____ + _____

   b. $(m+5)^2-10(m+2) =$ _____ + _____

   c. $\frac{p^2-1}{3pq} \times \frac{q^2}{p-1} = -$

[7 m]

= 18 m

LIVEWORKSHEETS

6. Factorise the following expressions.

a. $5n + 30$
= _____

b. $m^2 - 2m - 15$
= _____

[2 m]

7. Simplify: $\frac{x-y}{3x+2y} \div \frac{(x-y)^2}{12x+8y}$. Drag and drop the right answers.

$$= \frac{x-y}{3x+2y} \times \frac{12x+8y}{(x-y)^2}$$

$$= \frac{x-y}{3x+2y} \times —$$

$$= —$$

$x + y$

$4(3x + 2y)$

4

$(x + y)(x - y)$

[4 m]

8. Express the letters in the brackets as subject of the formula.

a. $a = s - 3$ [s]
s = _____

b. $3h = 5 + k$ [k]
k = _____

c. $v = u + \frac{1}{2}t$ [t]
t = _____

[3 m]

9. Given that $p = a + 8(n - 3)$, find the value of n when $p = 60$ and $a = 4$.

$$p = a + 8(n - 3)$$
$$p = a + 8n - 24$$
$$8n = p - a + 24$$

$$n = \frac{____ - ____ + 24}{8}$$

$$n = _____$$

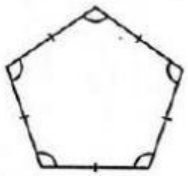
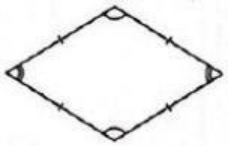
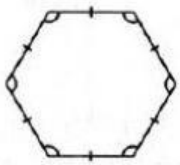
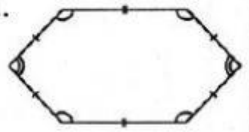
[3 m]

= 12 m

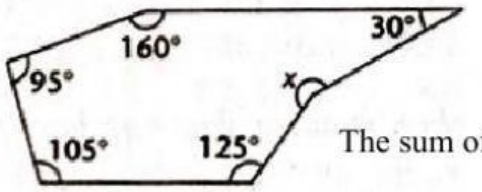
LIVEWORKSHEETS

10. Choose 'yes' for the regular polygons and 'no' for the irregular polygons.

[4 m]

a.	b.	c.	d.
			
( )	( )	( )	( )

11. Find the value of x.



The sum of interior angles

$= (___ - 2) \times 180°$

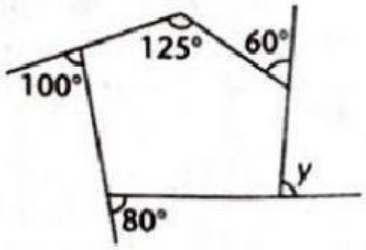
$= _____°$

$x + 160° + 95° + 105° + 125° + 30° = _____°$

$x = _____°$

[4 m]

12. Find the value of y.



$y + 100° + 80° + 60° + (180° - 125°) = 360°$

$y + ____ = 360°$

$y = _____°$

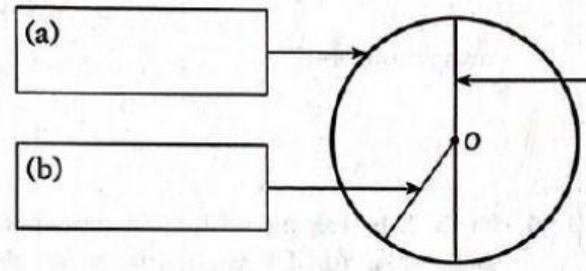
[2 m]

= 10 m

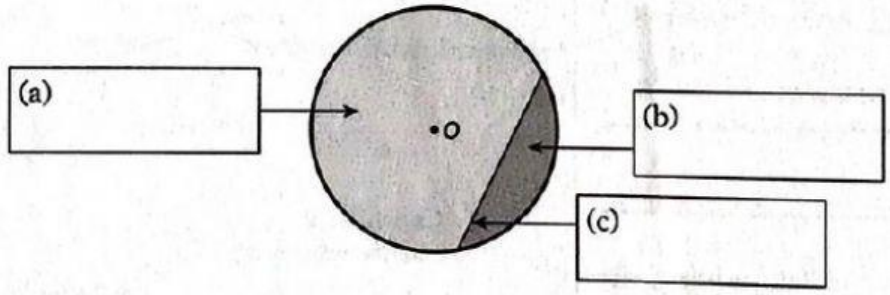
LIVEWORKSHEETS

13. Drag and drop the parts of the following circles.

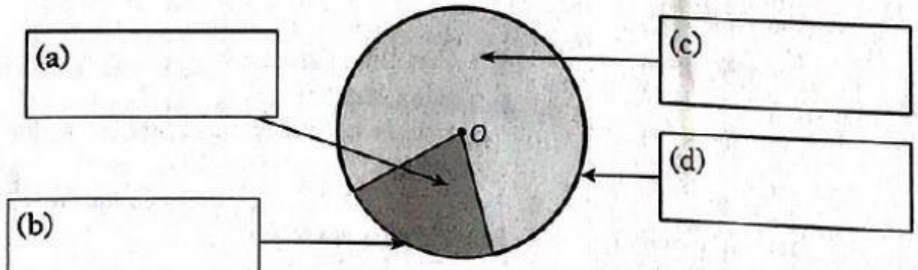
i.



ii.



iii.



Jejari *Radius*
Diameter *Diameter*
Lilitan *Circumference*
Perentas *Chord*
Lengkok minor *Minor arc*
Lengkok major *Major arc*
Sektor minor *Minor sector*
Sektor major *Major sector*
Tembereng minor *Minor segment*
Tembereng major *Major segment*

[10 m]

= 10 m

LIVEWORKSHEETS

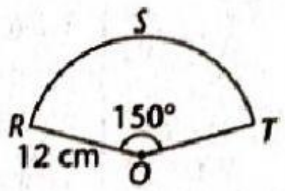
14. The diameter of a circle is 20 cm. Find the circumference, in cm, of the circle. Use $\pi = \frac{22}{7}$.

Circumference
$= \pi d$

$=$ _____

[1 m]

15. Calculate the length of arc RST. Use $\pi = 3.142$.



Length of arc

$= \frac{\theta}{360^\circ} \times 2\pi r$

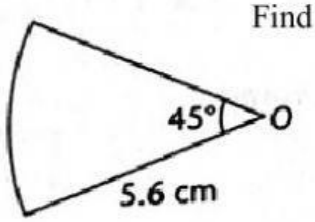
$= \frac{\quad^\circ}{360^\circ} \times 2 \times 3.142 \times$ _____

$=$ _____ cm

[3 m]

16. (i) The diagram shows a sector of a circle with centre O. Use $\pi = \frac{22}{7}$.

Find the area, in cm^2, of the sector.



Area of a sector

$= \frac{\theta}{360^\circ} \times \pi r^2$

$= \frac{\quad^\circ}{360^\circ} \times \frac{22}{7} \times$ _____

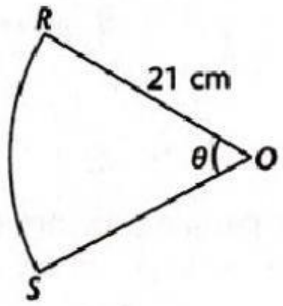
$=$ _____ cm^2

[3 m]

= 7 m

LIVEWORKSHEETS

(ii) The diagram shows a sector of a circle with centre O. Use $\pi = \frac{22}{7}$.



Given the length of arc RS is 22 cm. Find the value of θ

$\frac{\theta}{360°} \times 2\pi r$ = Length of arc

$\frac{\theta}{360°} \times 2 \times \frac{22}{7} \times 21 = 22$

$\theta = 22 \times 360° \times$ _____ $\times$ _____ $\times$ _____

$\theta =$ _____cm

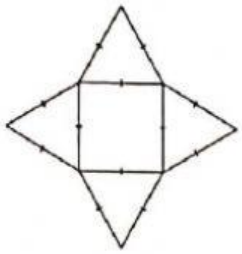
[4 m]

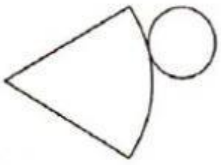
17. Match each of the following solids with its net.

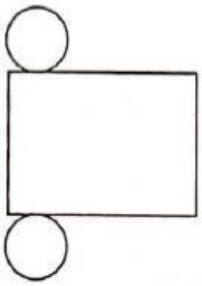
(i) Kon *Cone*

(ii) Piramid *Pyramid*

(iii) Silinder *Cylinder*





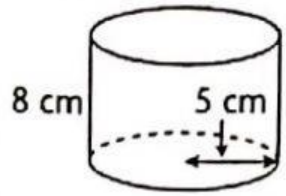


[3 m]

= 7 m

LIVEWORKSHEETS

17. Find the surface area of the cylinder below. Type the calculation steps.



(Guna/*Use* $\pi = 3.142$)

Surface are of a cylinder

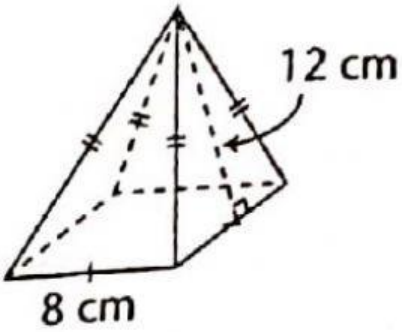
$= 2\pi r^2 + 2\pi rt$

$=$ _____ + _____

$=$ _____

$=$ _____ cm^2 [4 m]

18. Find the surface area of the pyramid below. Type the calculation steps.



Surface are of a pyramid

$= (4 \times Area\ of\ a\ triangle) + (base\ area)$

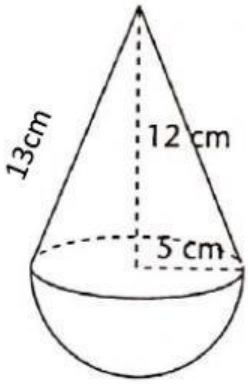
$= 4 \times$ (_____) + (_____)

$=$ _____

$=$ _____ cm^2

[4 m]

19. Calculate the surface area of the three-dimensional combined shapes. Type the calculation steps.



$\left(\text{Guna/}Use\ \pi = \frac{22}{7}\right)$

Surface are of a hemisphere + cone

$= \frac{1}{2}(4\pi r^2) + (\pi rs)$

$= \frac{1}{2}$ (_____) + (_____)

$=$ _____

$=$ _____ cm^2

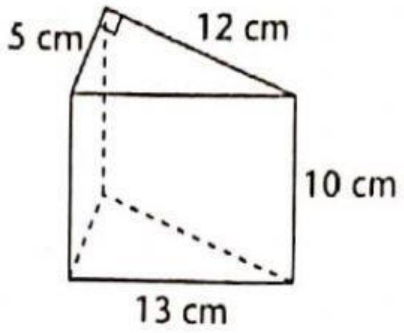
[4 m]

= 12 m

LIVEWORKSHEETS

20. Find the volume of the following three-dimensional shapes. Type the calculation steps.

a.



Volume of prism

$= base\ area \times h$

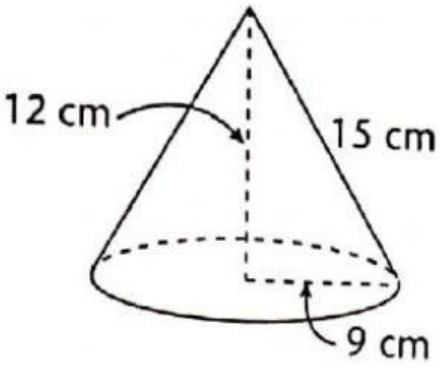
$= \frac{1}{2} ab \times h$

$= \frac{1}{2} \times$ _____

$=$ _____ cm^3

[2 m]

b.



Volume of cone

$= \frac{1}{3} \times\ base\ area \times h$

$= \frac{1}{3} \pi r^2 \times h$

$= \frac{1}{3} \times \frac{22}{7} \times$ _____

$=$ _____ cm^3

[2 m]

= 4 m

LIVEWORKSHEETS