NUR AFRICA ACADEMY

CENTER OF WISDOM

Maths grade 6

Grade-6

MATHS

Answers.

Exercise 7.1

Page - 88 - 89

(#1) c) $2x+10 = x-20$

$2x - x = -20 - 10$

$x = -30$

(m) $\frac{5x-8}{4} = \frac{8}{1}$

$5x - 8 = 32$

$5x = 32 + 8$

$\frac{5x}{5} = \frac{40}{5}$

$x = 8$.

(o) $\frac{x+2}{x+3} = \frac{4}{5}$

$\Rightarrow 5(x+2) = 4(x+3)$

$\Rightarrow 5x + 10 = 4x + 12$

$\Rightarrow 5x - 4x = 12 - 10$

$\Rightarrow x = 2$

Exercise 7.2

Page - 91

(#3) b) $\frac{1}{6}x > 3$

$\left(\frac{6}{1} \times \frac{1}{6}x\right) > \left(3 \times \frac{6}{1}\right)$

$x > 18$

d) $\frac{1}{3}x - \frac{4}{2} < 0$

$\frac{1}{3}x < 0 + \frac{4}{2}$

$\frac{3}{1} \times \left(\frac{1}{3}x\right) < \left(\frac{4}{2}\right)\frac{3}{1}$

$x < \frac{12}{2}$

$x < 6$

(g) $3(2x-5) > x+1$

$6x - 15 > x + 1$

$6x - x > 1 + 15$

$\frac{5x}{5} > \frac{16}{5}$

$x > \frac{16}{5}$

Exercise 9.2
Page 101

① a) $c = 2\pi r$, $r = 5cm$

$c = 2\pi \times 5cm$

$c = 10\pi cm$

b) $r = 8cm$

$c = 2\pi r$, $2\pi \times 8cm$

$c = 16\pi cm$

#3 a) $c = 40\pi cm$

$c = 2\pi r$

$40\pi cm = 2\pi r$

$\frac{40\pi cm}{2\pi} = \frac{2\pi r}{2\pi}$

$r = 20 cm$

c) $c = 24\pi cm$

$c = 2\pi r$

$\frac{24\pi cm}{2\pi} = \frac{2\pi r}{2\pi}$

$r = 12 cm$

Exercise 10.1
Page 105

#1 a) $4x + 5x = 180^\circ$ ... same side interior angle

$9x = 180^\circ$

$\frac{9x}{9} = \frac{180^\circ}{9}$

$x = 20^\circ$

#2) a) $5x + 70^\circ = 180^\circ$ ... same side interior angle

$\Rightarrow 5x = 180^\circ - 70^\circ$

$\Rightarrow \frac{5x}{5} = \frac{110^\circ}{5}$

$\Rightarrow x = 22^\circ$

x) $3x = 2y$

$3(22^\circ) = 2y$

$\frac{2y}{2} = \frac{66^\circ}{2}$

$y = 33^\circ$

Exercise 11.1
Page - sss - 112

(#1) a) ~~Scalene~~ Isosceles triangle
b) Scalene " "
c) Scalene " "
d) Equilateral " "

(#2) (a) a) acute angled triangle
b) Right angled " "
c) Obtuse angled " "

Exercise 11.3
Page - 112

(#1) a) $90^\circ + 56^\circ + x = 180^\circ$
---- Exterior angle sum of triangles
$140^\circ + x = 180^\circ$
$x = 180^\circ - 140^\circ$
$x = 40^\circ$

b) $x + 75^\circ = 180^\circ$
$x = 180^\circ - 75^\circ$
$x = 105^\circ$
where x is the sum of the two angles

c) equilateral triangle
d) Scalene triangle
e) Isosceles triangle
f) 180°
g) acute angled triangle

(#3) 2 angles are complement means the sum of their angles
(x) is 90°
$90^\circ + y = 180^\circ$
$y = 180^\circ - 90^\circ$
$y = 90^\circ$

(#4) acute angled triangle

(#5) 2:3:5 → ratio of the angles of a triangle

$\frac{2}{10}, \frac{3}{10}, \frac{5}{10}$

$\frac{2}{10}(180^\circ) = 36^\circ$

$\frac{3}{10}(180^\circ) = 54^\circ$

$\frac{5}{10}(180^\circ) = 90^\circ$

So: The angles of a triangle with the ratio 2:3:5 has angles 36°, 54° & 90° respectively.

Exercise 12.1
Page - 120

(I)(II) Matching
1 - B 3 - D
2 - C 4 - A

(2) a) CDFG - Square
b) DGED - Parallelogram
c) ABCG - Rectangle
d) ABDE

Exercise 12.2
Page - 120-121

1) a - True c - False
b - False d - True

#2) a) $y = 2$
b) $x = 3,\ y = 8$
c) $y = 4,\ x = 4$

Exercise 12.3
Page - 121-122

a) $A = \frac{1}{2}(4\text{cm} \times 6\text{cm})$
$= \frac{1}{2}\ 24\text{cm}^2$
$= 12\text{cm}^2$

$P = 4\text{cm} + 6\text{cm} + 10\text{cm}$
$= 20\text{cm}$

(b) ~~A~~ + $A = \frac{1}{2}bh$
$A = \frac{1}{2}(8\text{cm} \times 5\text{cm})$
$A = \frac{1}{2}(40\text{cm}^2)$
$A = 20\text{cm}$

$P = 6\text{cm} + 7\text{cm} + 8\text{cm}$
$= 21\text{cm}$

c) $A = l^2$ $= 10\text{cm} \times 10\text{cm}$
$A = 100\text{cm}^2$
→ bice its Square
$P = 4l = 4(10\text{cm})$
(d) $= 40\text{cm}$

$A = l^2 = 7\text{cm} \times 7\text{cm}$
$= 49\text{cm}^2$

$P = 4l = 4(7\text{cm})$
$= 28\text{cm}$

e) $A = l \times w$

$A = 12\text{cm} \times 4\text{cm}$

$= 48\text{cm}^2$

$P = 2(l + w)$

$= 2(12\text{cm} + 4\text{cm})$

$= 2(16\text{cm})$

$= 32\text{cm}$

f) $A = l \times w$

$A = 14\text{cm} \times 5\text{cm}$

$A = 70\text{cm}^2$

$P = 2(14\text{cm} + 5\text{cm})$

$P = 2(19\text{cm})$

$P = 38\text{cm}$

g) $A = A1 + A2$

let $A1$ = Area of triangle

$A2$ = Area of rectangle

$A1 = \frac{1}{2} b \times h$, $b = 5\text{cm}$, $h = 7\text{cm}$

$A1 = \frac{1}{2}(5\text{cm} \times 7\text{cm})$

$A1 = \frac{1}{2}(35\text{cm}^2)$

$A1 = 17.5\text{cm}^2$

$A2 = l \times w$, $l = 5\text{cm}$, $w = 6\text{cm}$

$A2 = 5\text{cm} \times 6\text{cm}$

$= 30\text{cm}^2$

$A = A1 + A2$

$A = 17.5\text{cm}^2 + 30\text{cm}^2$

$A = 47.5\text{cm}^2$

$P = 7\text{cm} + 5\text{cm} + 6\text{cm} + 5\text{cm} + 7\text{cm} + 6\text{cm}$

$= 2(7\text{cm} + 6\text{cm} + 5\text{cm})$

$= 36\text{cm}$

Good Luck

June, 2020

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