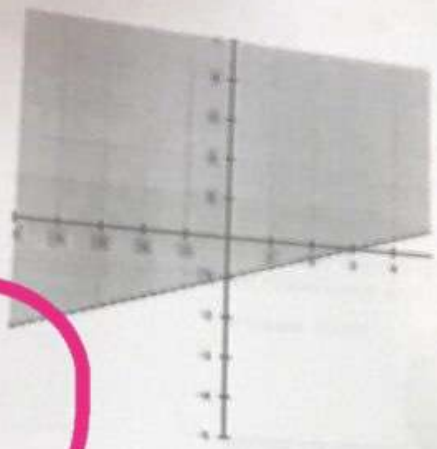
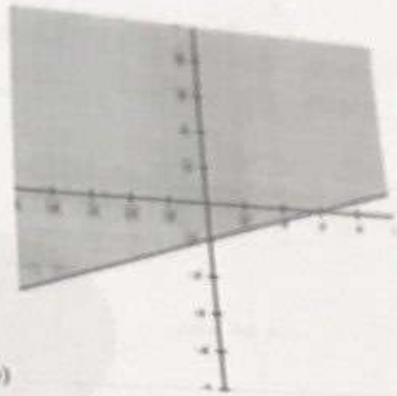
13. Graph $x-3y<3$

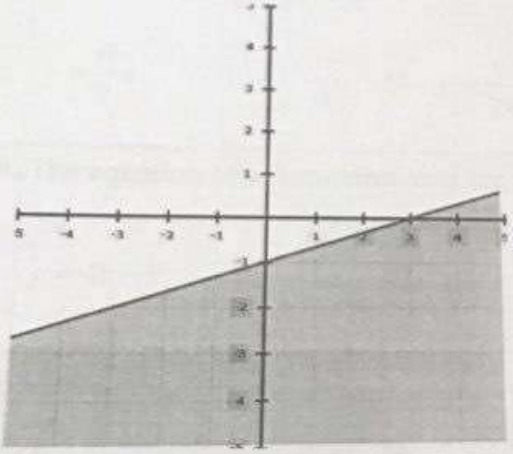
a)



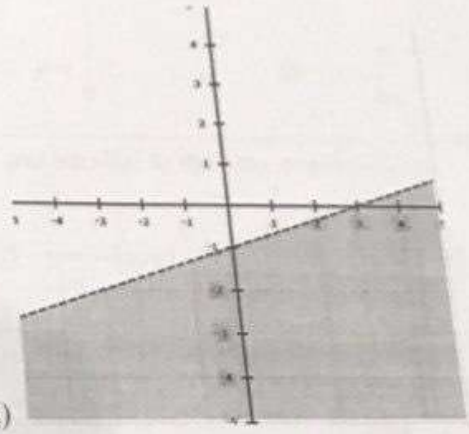
b)



c)



d)



14. One of the following rational expressions is defined for all real numbers.

a) $\dfrac{2x-1}{x+5}$ b) $\dfrac{1}{x^2-4}$ c) $\dfrac{1}{x^2+1}$ d) $\dfrac{1}{\sqrt{x}}$

15. Factor: $px+py+qx+qy$

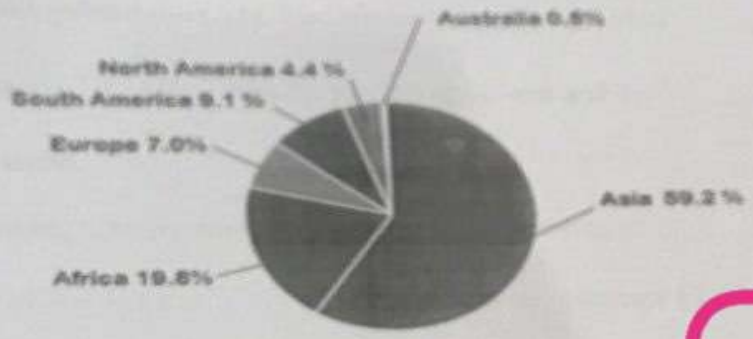
a) $(x+p)(y+q)$ b) $(x+y)(p+q)$ c) $pq(x+y)$ d) Prime

FORM A

16. Two lines are perpendicular if the product of their slopes is:

a) 1 b) 0 c) $\sqrt{2}$ d) -1

17. It has been projected that in 2050, the world population will be 8909 million. According to the chart, what is the population of Asia? Round the answer to the nearest million.



a) 4922 b) 5621 c) 4436 d) 5274

18. Solve for y: $\frac{x}{y}=\frac{6}{7}$

a) $y=\frac{6}{7}x$ b) $y=\frac{6}{7x}$ c) $y=\frac{7}{6}x$ d) $y=\frac{7}{6x}$

19. The equation of a line containing the point $(2,-1)$ and parallel to the line $y=4x-1$ is:

a) $y=4x-9$ b) $y=-\frac{1}{4}x-\frac{1}{2}$ c) $y=-4x+1$ d) $y=4x-6$

20. $LCM(24,36)=$

a) 60 b) 72 c) 12 d) 864

Question	1	2	3	4	5	6	7	8	9	10
Answer										
Question	11	12	13	14	15	16	17	18	19	20
Answer										

ich of the following ordered pairs is a solution for the inequality $x-y<-1$

a) $(3,4)$ b) $(0,0)$ c) $(-7,-7)$ d) $(-5,-2)$

7. Select the **True** statement:

a) The absolute value of a number is always negative.

b) We can translate "5 less than x" as $5-x$

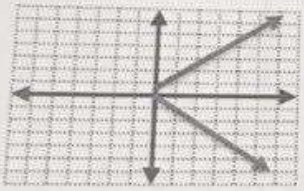
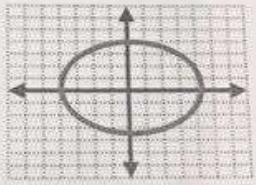
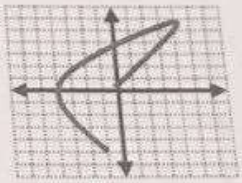
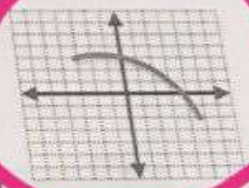
c) If $a<b$, then a lies to the left of b on the number line.

d) The quotient $\frac{x}{y}$ is defined when $y=0$

8. Simplify: $a^{6k} \div a^{3k}$

a) a^{9k} b) a^{3k} c) a^{2k} d) a^2

9. Which of the following is a function:

a)  b)  c)  d) 

10. A system of two equations in two variables is consistent and the equations are dependent then this system has:

a) Infinitely many solution b) One solution c) No solution d) Two solutions

11. Solve the inequality $4<\frac{x}{2}\leq 6$

a) $(8,12]$ b) $(2,3]$ c) $[8,12)$ d) $[2,3)$

12. Multiply and write scientific notation for the result $(9.9\times10^{-6})(8.23\times10^{-8})$

a) 81.477×10^{-14} b) 8.1477×10^{-13} c) 81.477×10^{48} d) 8.1477×10^{47}

FORM A

Question 1: (20 Marks)

Choose the correct answer, write your answer in the table below:

1. Subtract: $\frac{x}{3}-\frac{2x-1}{-3}$

a) $\frac{-x+1}{3}$ b) $\frac{-x-1}{3}$ c) $\frac{3x-1}{3}$ d) $\frac{3x-1}{6}$

2. A linear function is any function that can be described by:

a) $f(x)=ax^2+bx+c$

b) $f(x)=ax+b$

c) $f(x)=\sqrt{ax+b}$

d) $f(x)=\frac{1}{ax+b}$

3. Which of the following pairs of lines are parallel:

a) $\begin{cases} y=7 \\ x=7 \end{cases}$

b) $\begin{cases} y=6x+3 \\ y=-2x+3 \end{cases}$

c) $\begin{cases} y=4x \\ y=-\frac{1}{4}x \end{cases}$

d) $\begin{cases} y=5x-1 \\ y=5x+2 \end{cases}$

4. The interval notation for the set $\{x \mid x \text{ ia a real number}\}$ is:

a) $(-\infty,\infty)$ b) $[0,\infty)$ c) $(-\infty,0]$ d) $(0,\infty)$

5. Let $A=\{1,2,3,4,5,6\}$ and $B=\{3,4,7,8\}$, then $A\cap B=$ $\{3,4\}$

d) $\{7,8\}$

$\frac{x}{y} \times \frac{6}{7}$

سؤال 18

$\frac{6y}{6} = \frac{7x}{6}$

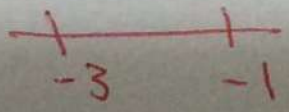
$y = \frac{7}{6}x$

سؤال 6

$-5 - (-2) < -1$

$-5 + 2 < -1$

$-3 < -1$



سؤال 8

$a^{6k} \div a^{3k}$

$a^{6k} \cdot \frac{1}{a^{3k}} = \frac{a^{6k}}{a^{3k}} = a^{6k-3k} = a^{3k}$

$$2.4 < 2.\frac{x}{2} \leq 2.6$$

$$8 < x \leq 12$$

سؤال ١١

$$(8, 12]$$

$$\frac{x}{3} - \frac{2x-1}{-3}$$

سؤال ①

$$\frac{-x}{-3} - \frac{2x-1}{-3}$$

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

سؤال 5

$A = \{1, 2, \underline{3}, \underline{4}, 5, 6\}$ and $B = \{\underline{3}, \underline{4}, 7, 8\}$

then $A \cap B = \{3, 4\}$

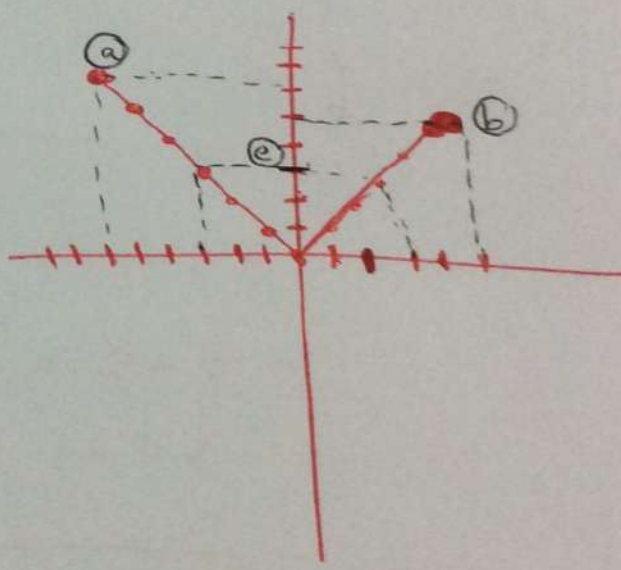
سؤال ② فقرة ⓒ

a) $f(-6) = 6$

b) $f(5) = 5$

c) The domain

$= \{x \mid -6 \leq x \leq 5\}$



d) The Range

$= \{y \mid 0 \leq y \leq 6\}$

e) All x value for which $f(x) = 3$

$x = -3, 3$

Q4) ①

The Point $(-3,-1)$

and Perpendicular to the line

$y = 3x + 4$

$y = mx + b$

$y = 3x + 4$

$m_1 = 3$

$m_2 = -\frac{1}{3}$ from Perpendicular

$y - y_1 = m(x - x_1)$

$y - (-1) = -\frac{1}{3}(x - (-3))$

$y + 1 = -\frac{1}{3}(x + 3)$

$y + 1 = -\frac{1}{3}x - 1$

$y = -\frac{1}{3}x - 1 - 1$

$y = -\frac{1}{3}x - 2$

$\begin{cases} x = -2y - 13 & ① \\ 2x + 5y = -32 & ② \end{cases}$

بالتعويض بقيمة x في المعادلة ②

$2(-2y - 13) + 5y = -32$

$-4y - 26 + 5y = -32$

$y - 26 = -32$

$y = -32 + 26$

$\boxed{y = -6}$

نرجع لمعادلة ① ونعوض بقيمة $y = -6$

$x = -2y - 13$

$x = -2(-6) - 13$

$x = 12 - 13$

$\boxed{x = -1}$

Solution set $= \{-1, -6\}$

$$\frac{-x+3}{x} \times \frac{x+1}{1}$$

$$-x+3 = x(x+1)$$

$$-x+3 = x^2+x$$

$$0 = x^2+x+x-3$$

$$0 = x^2+2x-3$$

or

$$x^2+2x-3 = 0$$

$$(x+3)(x-1) = 0$$

$x+3=0$ or $x-1=0$

$x=-3$ $x=+1$

Solution set $= \{-3, 1\}$

$$|-x+5| \geq 1$$

$-x+5 \leq -1$ or $-x+5 \geq 1$

$-x \leq -1-5$ $-x \geq 1-5$

$-x \leq -6$ $-x \geq -4$

$x \geq 6$ $x \leq 4$

Solution set $= (-\infty, 4] \cup [6, \infty)$