The National Orthodox School Shmaisani

Mark
10

Subject: Mathematics **Second Semester / Quiz (3)**

Name: Answers **Grade 8 CS ( )**

Date:

Question 1 **3 marks**

Solve the following inequalities:

- $-3x \geq 36$

$\frac{-3x}{-3} \quad \frac{36}{-3}$

$x \leqslant -12$

- $3x + 6 \geq -4x + 27$

$3x + 4x \geqslant 21$

$\frac{7x}{7} \geqslant \frac{21}{7}$

$x \geqslant 3$

- $\frac{x-8}{7} \leq 2$

$x - 8 \leqslant 14$

$x \leqslant 14 + 8$

$x \leqslant 22$

Question 2 — 2 marks

I) Which whole numbers from 1 to 20 make both inequalities true?

$2x - 13 \leq 7$ and $5x + 15 > 55$

$2x \leq 13 + 7$

$\frac{2x}{2} \leq \frac{20}{2}$

$x \leq 10$

$5x > 55 - 15$

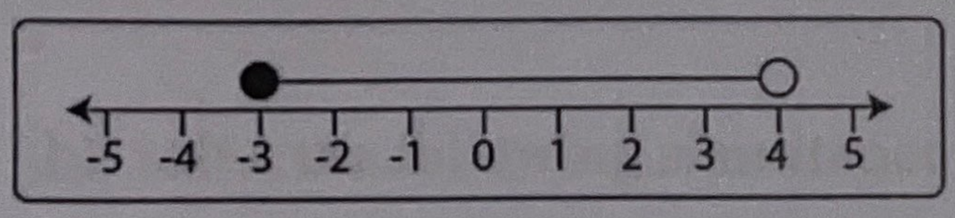
$\frac{5x}{5} > \frac{40}{5}$

$x > 8$

9, 10

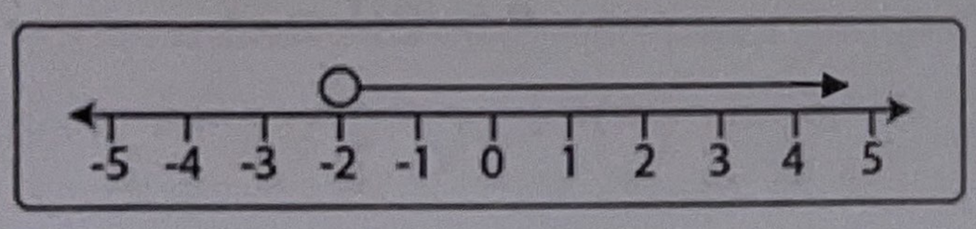
II) Write the inequality represented by each of these number lines in the box below:

a)



$-3 \leq x < 4$

b)



$x > -2$

Question 3 — 1 mark

a) Find the gradient of the line joining the points (2, 6) and (4, 14).

$G = \frac{y_2 - y_1}{x_2 - x_1} = \frac{14 - 6}{4 - 2} = \frac{8}{2} = 4$

b) Write down the equation of a line parallel to $y = 5x + 3$ and passes through (0, -2).

$G = m = 5$

$C = -2$

$y = mx + c$

$y = 5x - 2$

Question 4

4 marks

a) Solve the following simultaneous equations by elimination:

(2x - y = 4) x 2

4x + 3y = 18

$4x - 2y = 8$

$\ominus \quad 4x + 3y = 18$

$-5y = -10$

$\frac{-5y}{-5} = \frac{-10}{-5}$

$y = 2$

$2x - y = 4$

$2x - 2 = 4$

$\frac{2x}{2} = \frac{6}{2}$

$x = 3$

x = 3

y = 2

b) Solve the following simultaneous equations by substitution:

x - 3y = 1 $\rightarrow x = 3y + 1$

4x – 10y = 6

$4(3y + 1) - 10y = 6$

$12y + 4 - 10y = 6$

$2y = 6 - 4$

$2y = 2$

$y = 1$

$x = 3y + 1$

$x = 3 \times 1 + 1$

$x = 3 + 1$

$x = 4$

x = 4

y = 1

Thank you!