Republic of the Philippines
UNIVERSITY OF RIZAL SYSTEM
Province of Rizal

Prelim EXAMINATION IN QUANTITATIVE METHODS

NAME: DEDORO, JOHN NEHRY C. **DATE: _____**
SECTION: BSIT 4-1

QUIZ RULES AND MECHANICS

1. Answers in your test will be written in a paper while online with open camera (GMeet).
2. QUIZ RULES AND MECHANICS
3. Students must write their full name, section and date in the paper with their signature.
4. Questions will be flash online while students will write their answers in paper.
5. After the quiz, students will take a picture of their quiz and upload it immediately in the designated folder (PRELIM EXAM 1) in your MMW google drive.
6. Each part of the quiz and quiz process will only be given limited time. Failure to follow the instruction and time limit will result to failed examination.

EXAMINATION PROPER

Solve each equation by factoring.

1) $x^2 - 9x + 18 = 0$

$(x-3)(x-6)=0$

$x-3=0$ or $x-6=0$

$x=3$ or $x=6$

2) $x^2 + 5x + 4 = 0$

$(x+1)(x+4)=0$

$x+1=0, x + 4 = 0$

$x= -1$ or $x=-4$

3) $b^2 + 5b = 0$

$b(b+5)=0$

$b=0$ or $b+5=0$

$b=0$ or $b=-5$

4) $x^2 - 11x + 28$

$(x-4)(x-7)=0$

$x-4=0$ or $x-7=0$

$x=4$ or $x=7$

5) $k^2 + 15k = -56$

k2+15k−(−56)=−56−(−56)

k2+15k+56=0

(k+7)(k+8)=0

k+7=0 or k+8=0

k=−7 or k=−8

6) $x^2 + 17x + 49 = 3x$

x2+17x+49−3x=3x−3x

x2+14x+49=0

(x+7)(x+7)=0

x+7=0 or x+7=0

x=−7

Solve and graph each inequality. (2 point each)

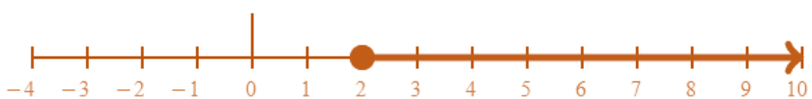
1. $4x - 1 \geq 7$

4x−1+1≥7+1

4x≥8

4x/4 >= 8/4

x>= 2



2. $2(x - 5) \leq 8$

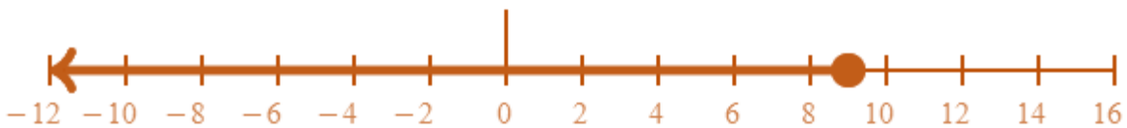
$2x-10\leq 8$

$2x-10+10\leq 8+10$

$2x\leq 18$

$2x/2 <= 18/2$

/X <= 9



3. $3 - 2x < x + 6$

$3-2x<x+6$

$-2x+3<x+6$

$-2x+3-x<x+6-x$

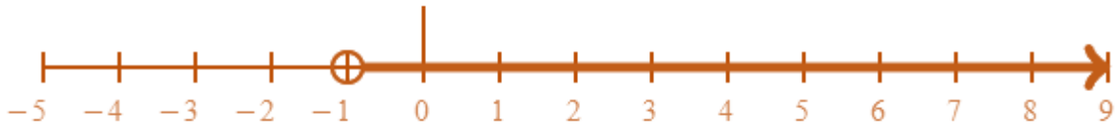
$-3x+3<6$

$-3x+3-3<6-3$

$-3x<3$

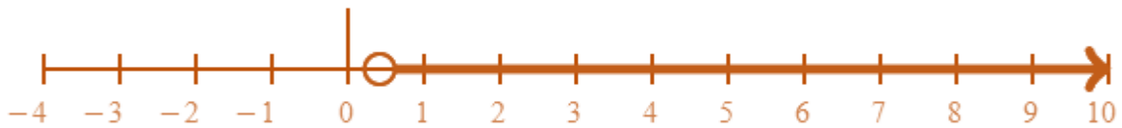
$-3x/-3 < 3/-3$

x>−1



4. 12 x > 5

x>5/12



5. 3(x + 4) > 12

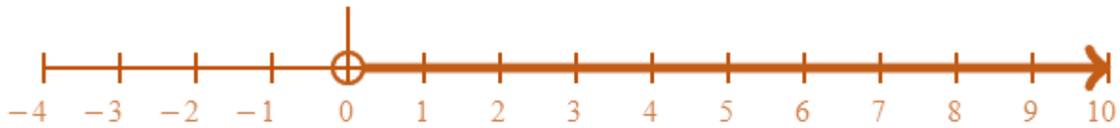
3x+12>12

3x+12−12>12−12

3x>0

3x/3 > 0/3

x > 0



6. $2x - 7 \leq 5 - 4x$

$2x-7 \leq -4x+5$

$2x-7+4x \leq -4x+5+4x$

$6x-7 \leq 5$

$6x-7+7 \leq 5+7$

$6x \leq 12$

$6x/6 <= 12/6$

X <= 2

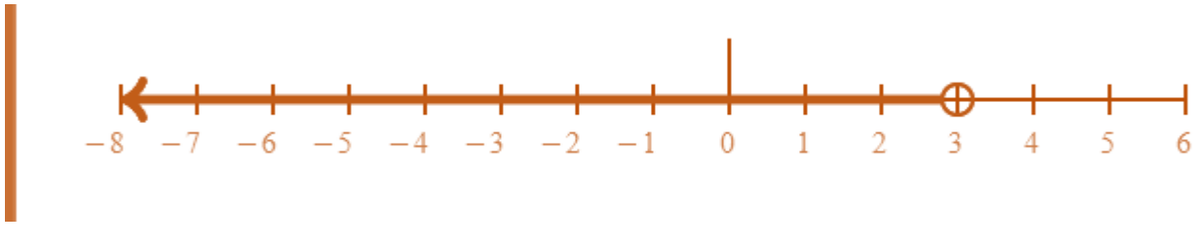
7. $3x + 2 < 11$

$3x+2-2<11-2$

$3x<9$

$3x/3 < 9/3$

x < 3



8. $4(x - 6) \geq 20$

4x−24≥20

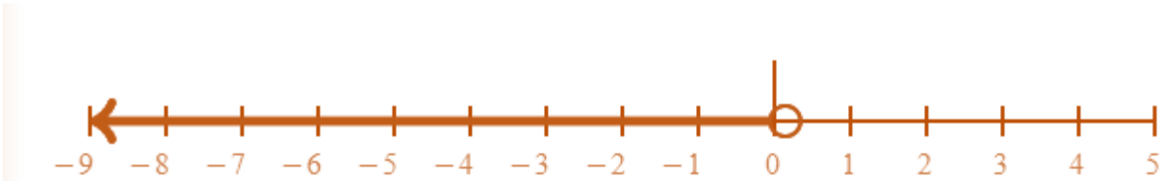
4x−24+24≥20+24

4x≥44
4x/4 >= 44/4

X >= 11

9. 14 x < 2

x < 1/7



10. $12 - 3x > 2x + 1$

$-3x+12>2x+1$

$-3x+12-2x>2x+1-2x$

$-5x+12>1$

$-5x+12-12>1-12$

$-5x>-11$

$-5x/-5 > -11/-5$

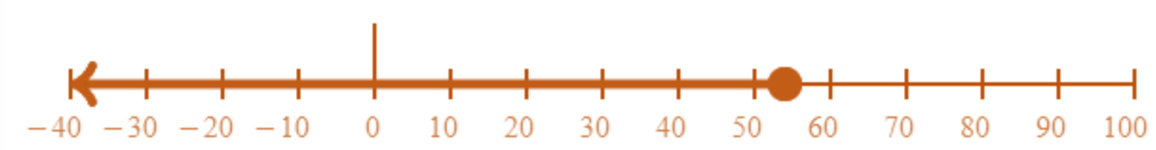
$x < 11/5$

11. $x-57 \leq -3$

$x-57\leq-3$

$x-57+57\leq-3+57$

x ≤ 54



12. $3(5 - x) \geq 7x - 1$

$-3x+15 \geq 7x-1$

$-3x+15-7x \geq 7x-1-7x$

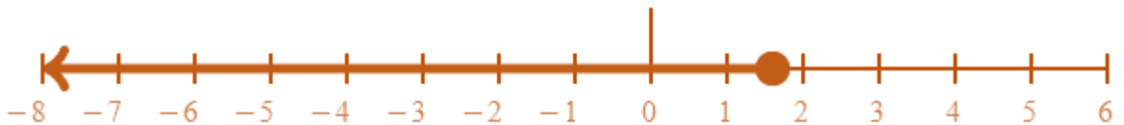
$-10x+15 \geq -1$

$-10x+15-15 \geq -1-1$

$-10x \geq -16$

-10x/-10 >= -16/-10

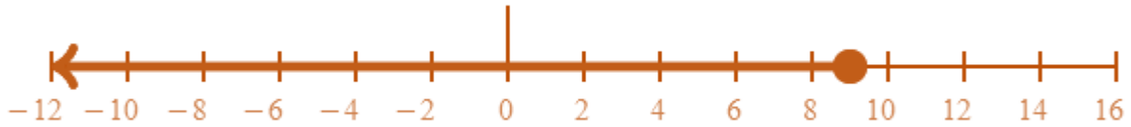
x = <= 8/5



13. $y-2 \leq 7$

$y-2+2 \leq 7+2$

y ≤ 9



14. $m+25 < 2m + 3$

$m+25-2m<2m+3-2m$

$-m+25<3$

$-m+25-25<3-25$

$-m<-22$

$-m/-1 < -22/-1$

m > 22

15. $m-23 \geq 2m+17$

$m-23 \geq 2m+17$

$-m-23 \geq 17$

$-m-23+23 \geq 17+23$

$-m \geq 40$

$-m/-1 >= 40/-1$

$m \leq -40$

Solve for the unknown

31. 41 + 59 = 65 + y (41+59)=y+65 100=y+65 y+65=100 y+65−65=100−65 **y=35**	32. x - 72 = 12 x−72+72=12+72 **x=84**
33. 15 = a - 80 a−80=15 a−80+80=15+80	34 x + 88 = 132 x+88=132 x+88−88=132−88

a=95	**x=44**
35. x - 43 = 54 x−43+43=54+43 **x=97**	36. 98.8 + y = 141.64 y+98.8=141.64 y+98.8−98.8=141.64−98.8 **y=42.84**
37 4544 = 71a 71a=4544 71a/71 = 4544/71 **a = 64**	38 n ÷ 23 = 3 n/23 = 3 (n/23) * (23) = (3)* (23) **n = 69**

Matching Type: Match Column A with Column B and Column C. Write the letter of your answer on the column before the given.

ANSWER	A	B	C
	EQUATION	STANDARD FORM	SOLUTION(S)
E, H	39 – 40 $\frac{x+1}{3} - \frac{2}{x} = 2$	a. x^2-8x-20=0	f. 10 & -2

C, J	$41-42 \quad \frac{x+2}{2}-\frac{2}{x}=1$	b. x^2-5x+4=0	g. 1 & 4
A, F	$43-44 \quad \frac{x}{4}-\frac{5}{x}=2$	c. x^2-4 =0	h. 6 & -1
B, G	$45-46. \quad \frac{1}{x-2}+\frac{2}{x}=1$	d. $2x^2$-4 =0	i. $\sqrt{2}$ & $-\sqrt{2}$
D, I	47- 48. $\frac{2}{x+1}=\frac{2x}{x+2}$	e. x^2-5x -6 =0	j. 2 & -2

Write each fraction in lowest terms.

49. $\frac{84a^2}{108a^6}$ (84/108) /12 **= 7/9a^4**	50. $\frac{99a^3}{66a^2}$ $\frac{99a^3}{66a^2}$ $\frac{99a}{66}$ $\frac{3a}{2}$ **$\frac{3}{2}$ a**	51 $\frac{a^2+9a+18}{a^2+a-30}$ $\frac{(a+3)(a+6)}{(a-5)(a+6)}$ **$\frac{a+3}{a-5}$**

52 $\frac{36i^6}{63i}$ $= \frac{4}{7} i$	53 $\frac{21c^6}{56c^2}$ $21/56 \div 7$ $= \frac{3c^4}{8c}$	54 $\frac{-25g^3 + 300g^2}{75g^2 - 900g}$ $\frac{-25g^2 + 300g}{75g - 900}$ $\frac{-g^2 + 12g}{3g - 36}$ $\frac{g(-g + 12)}{3(g-12)}$ $= \frac{-1\ g}{3}$
55 $\frac{24g^3}{16g^2}$	56. $\frac{40h}{80h^6}$	

$24/16 \div 8$ $= \frac{3g}{2}$	$40/80$ $= \frac{1}{2h^5}$	57 $\frac{-7c^4y^4 - 7c^2y}{-56c^3y^3}$ (99/66) /33 **= $\frac{3a^2}{2a}$**
58. $\frac{-7a + 49}{a^2 - 2a - 35} \times \frac{8a^3 - 56a^2}{a^2 - 49}$ $\frac{56aa(-a+7)(a-7)}{(a+5)(a+7)(a-7)(a-7)}$ **$\frac{-56a^2}{a^2+12a+35}$**	59 $\frac{-v^2 - 2c}{5v} \times \frac{5v^3}{-2v^2c^2 - 4c^3}$ $\frac{-5v^4-10cv^2}{-10c^2v^2-20c^2v}$ **= $v^3 + 2cv$** **$2c^2v^2 + 4c^2$**	60 $\frac{8f^3 + 56f^2}{f^2 - 2f - 63} \times \frac{f^2 - 15f + 54}{f^2 - 36}$ **$\frac{8f^2x}{f+6}$**
61 +	62 +	63 +

$\frac{5i}{10} \quad \frac{8i}{5}$ **$= \frac{21\ i}{10}$**	$\frac{7j}{12} \quad \frac{3j}{4}$ **$= \frac{4}{3}$**	$\frac{4}{g} \quad \frac{5}{q}$ **$= \frac{5g + 4q}{gq}$**
64. $\frac{2g}{5} - \frac{3g}{10}$ $\frac{2}{5}g + \frac{-3}{10}g$ **$= \frac{1}{10}g$**	65 $\frac{9g}{8} - \frac{8g}{24}$ $\frac{9}{8}g + \frac{-1}{3}g$ **$= \frac{19}{24}g$**	66 $\frac{2j}{4} - \frac{6j + 6}{8}$ $= \frac{1}{2}j + \frac{-3}{4} + \frac{-3}{4}$ **$= \frac{-1}{4}j + \frac{-3}{4}$**

67. $\frac{6j}{4} + \frac{3j}{16}$ $\frac{3}{2}j + \frac{3}{16}j$ **$= \frac{27}{16}j$**	68. $\frac{7a}{4} - \frac{9a}{8}$ $\frac{7}{4}a + \frac{-9}{8}a$ $= \frac{7}{4}a + \frac{-9}{8}a$ **$= \frac{5}{8}a$**	69 $\frac{3}{b} - \frac{2}{y}$ **$= \frac{-3b+3y}{by}a$**
70 $\frac{6}{f} + \frac{7}{v}$	71 $\frac{7h-7}{8} + \frac{6h-9}{24}$	72 $\frac{7c+9}{12c} + \frac{2}{5c}$

= 7f+6v **fv**	= $\frac{7}{8}h + \frac{1}{4}h + \left(\frac{-7}{8} + \frac{-3}{8}\right)$ **= $\frac{9}{8}h + \frac{-5}{4}$**	= $\frac{35c^2 + 69c}{60c^2}$ **= $\frac{35c+69}{60c}$**
73 $\frac{2}{d} - \frac{7}{t}$ **$\frac{-7d+2t}{dt}$**	74 $\frac{2k-7}{8} - \frac{8k+11}{32}$ $\frac{1}{4}k + \frac{-7}{8} + \frac{-1}{4}k + \frac{-11}{32}$ $\left(\frac{1}{4}k + \frac{-1}{4}k\right) + \frac{-7}{8} + \frac{-11}{32}$ **= -39/32**	75 $\frac{8j+5}{18j} - \frac{-7j+2}{36j}$ $= \frac{162j^2 + 144j}{648j^2}$ $= \frac{162j + 144}{648j}$

		= **9j + 8** **36j**

76. $3x + 36$ = **3(x+12)**

77. $4x^2 + 16x$ = ***4x(x+4)***

78. $x^2 - 14x - 40$ =

79. $x^2 + 4x - 12$ = **(x−2)(x+6)**

80. $x^2 - 144$ = **(x+12)(x−12)**

81. $x^4 - 16$ = **(x+4)(x−4)**

82. $81x^2 - 49$ = **(9x+7)(9x−7)**

83. $50x^2 - 72$ = **2(5x+6)(5x−6)**

84. $2x^3 - 16x^2 - 18x$ = ***2x(x+1)(x−9)***

85. $4x^2 + 17x - 15$ = **(4x−3)(x+5)**

86. $-8x^2 - 15x + 2$ = **(−8x+1)(x+2)**

87. $x^3 - 3x^2 + 5x - 15$ = **(x−3)(x^2+5)**

88. $5rs + 25r - 3s - 15$ = **(s+5)(5r−3)**

89. $125x^3 - 64$ = **(5x−4)($25x^2$+20x+16)**

90. $2x^3 + 128y^3$ = **2(x^2+64y^2)**

Prepared by:

FLORABEL F. HILARIO