Math 3
Unit 2 Test

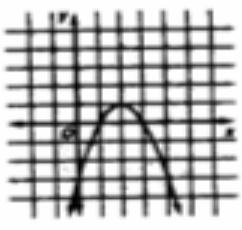
1) The graph of -3x + 2y – 6z = 18 intersects the x - , y - , z – axes at which three points?
   a) (6, 0 , 0), (0, 9, 0), (0,0,3)
   b) (-3, 0, 0), (0, -6, 0), (0, 0, 9)
   c) (-6, 0, 0), (0, 9, 0), (0, 0, -3)
   d) (-3, 0, 0), (0, 2, 0), (-6, 0, 0)

2) Which of the following describes the intersection of x + y + z = 3 and x + y + z = 6?
   a) They intersect at a point.
   b) They intersect at a line.
   c) They do not intersect.
   d) They are the same plane.

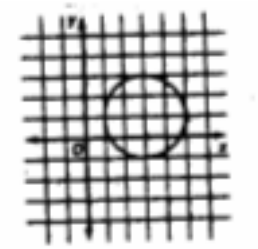
3) Find the distance between A (-3, 2, 4) and B(6, 8, 5).
   a) $\sqrt{118}$
   b) $\sqrt{50}$
   c) $\sqrt{120}$
   d) $\sqrt{47}$

4) The graph of x = 5 is parallel to which of the following?
   a) xy – plane
   b) xz – plane
   c) yz – plane
   d) x + y – z =3

5) What equation is shown by the graph?
   a) $y = (x - 2)^2 + 1$
   b) $x = (y - 2)^2 + 1$
   c) $y = -(x - 2)^2 + 1$
   d) $y = -(x + 2)^2 + 1$



6) What equation is shown by the graph?



a) $(x + 3)^2 + (y + 1)^2 = 4$
b) $(x – 3)^2 + (y – 1)^2 = 2$
c) $(x + 3)^2 + (y – 1)^2 = 2$
d) $(x – 3)^2 + (y – 1)^2 = 4$

7) Find the length of the major axis of the ellipse with equation $4(x + 4)^2 + 9(y – 1)^2 = 36$.
a) 4
b) 2
c) 6
d) 9

8) What are the slopes of the asymptotes of the hyperbola with equation $4x^2 – y^2 + 8x – 6y = 9$?
a) $\pm\frac{1}{2}$
b) $\pm\frac{1}{4}$
c) ± 2
d) ± 4

9) What is the graph of $x^2 + y^2 + 6x – 6y = 2$?
a) parabola
b) circle
c) ellipse
d) hyperbola

10) What is the graph of $x^2 + 25y^2 = 50$?
a) parabola
b) circle
c) ellipse
d) hyperbola

11) What is the graph of $x^2 - y^2 - 2x - 4y = 28$?

a) parabola
b) circle
c) ellipse
d) hyperbola

12)

How many points of intersection do the equations $x^2 + y^2 = 9$ and $3x^2 + 4y^2 = 16$ have?

A. 0
B. 1
C. 2
D. 3

13)

Find the points of intersection of the equations $x^2 + y^2 - 25 = 0$ and $x^2 + y^2 - 6x - 7 = 0$.

A. $(3, 4)$ and $(-3, 4)$
B. $(-3, 4)$ and $(-3, -4)$
C. $(-3, -4)$ and $(3, -4)$
D. $(3, -4)$ and $(3, 4)$