1 of 25
When performing Gaussian Elimination, where do we first want the 0s to be?
In the lower triangle
In the lower "40"
In the upper triangle
Along the main diagonal

2 of 25
What can you say about the indices *i* and *j* along a matrix's main diagonal?
i = j + 1
j = i + 1
i = j
There is no particular relationship between the indices.

3 of 25
On one extreme, a circle is a special case for an ellipse; at the other extreme, a ____ can be viewed as another special case for an ellipse.
circle
hyperbola
parabola
ellipse
Personally I would have to disagree with all of the above. A line segment could be a special case of an ellipse, but that's not a choice. And they already mentioned circle, and an ellipse I would think would be a special case of itself – that's just dumb. So I would have to choose hyperbola over parabola.

4 of 25
Which of the following is a method for solving systems of two variables?
Substitution
Addition
Both of the above
None of the above

5 of 25
Which conic section best describes the planetary orbits around the sun?
Circular
Elliptical
Parabolic
Hyperbolic

6 of 25
Is (-4, -6) a solution to $f(x) = x^2 - 4x - 6$?
Yes
No
Maybe
None of the above

7 of 25
If A is a 3 × 4 matrix, B is a 4 × 12 matrix, and C is a 12 × 2 matrix, then A + B − C =
a 19 × 18 matrix
84
Impossible, you cannot add or subtract matrices.
None of the above, these matrices do not match up.
It is impossible, but not b/c of the 3rd reason.

8 of 25
Consider a 2 × 2 matrix with [a b] as its top row and [c d] as its bottom row. What can be said about the matrix's inverse if ad = cb?
It does not exist
It equals 0
It equals 2ad
It has no solution
Choice (a) and (d) are different *how*???

9 of 25
Consider a 2 × 2 matrix with [4 16] as its bottom row and [2 4] as its top row; what is the value of its determinant?
-16
16
48
0

10 of 25
Forward Gaussian Elimination is to the ___ method as backwards Gaussian Elimination is to the ____ method.
substitution, addition
direct, indirect
addition, direct
addition, substitution

11 of 25
Consider a 2 × 2 matrix with [a b] as its top row and [c d] as its bottom row. What can be said about the matrix's determinant if ad = cb?
It does not exist
It equals 0
It equals 2ad
It has no solution

12 of 25
If in a system of three linear equations, all of the variables drop out of the solution process, this means that the linear functions are:
indeterminate.
inconsistent.
intersecting.
nothing; you made an error in your calculations.
It could also be inconsistent if you end up with something like 0 = 7. But if you end up with 0 = 0, then the system is indeterminate.

13 of 25
A particle starts at coordinates (2, 1). After 4 seconds, the particle is located at coordinates (-46, 29). Which of the following best describes the parametric equations that define the particle's path?
$x = -12t, y = 4t^2$
$x = -3t^2, y = 6t + 4$
$x = -3t^2, y = -7t$
$x = 3t^2, y = -6t - 4$

14 of 25
Which of the following is not a conic section?
Circle
Hyperbola
Parabola
All of the above are valid conic sections

15 of 25
Determinants are used with whose rule?
Cranberries' Rule
Cramer's Rule
Jerry's Rule
The Rule of Parsimony

16 of 25
For what value of C does the point (2, 2) sit on the curve, $h(x) = x^2 - 4x + C$?
6
-6
2
There's no way to determine this with the given information.

17 of 25
What is the minimum number of unique points that are required to determine the equation for a cubic?
1
2
3
4

18 of 25
A matrix that has the term coefficients on the right hand side of the equals signs added as the last column of a matrix composed of left hand coefficients is called:
an augmented matrix.
a lopsided matrix.
an inconsistent matrix.
an inconsiderate matrix.

19 of 25
Where are the coordinates of the foci for $9x^2 + 25y^2 - 36x - 50y - 164 = 0$?
(1, -2) & (1, 6)
(-1, -2) & (-1, 6))
(-2, 1) & (6, 1)
(2, -1) & (-6, -1)

20 of 25
Which of the following involves a directrix?
Circle
Hyperbola
Parabola
Ellipse

21 of 25
What is the size/order of a matrix that has 5 columns and 13 rows?
5 × 13
13 × 5
2 × 4
65

22 of 25
How far is a particle from its starting point after t = 2 seconds if x = -2½ t and y = 6t?
12.9 units
6.5 units
-6.5 units
13.0 units

23 of 25
Which of the following statements is true?
When rotating a conic section, combinations of sin? and cos? are often used
When rotating a conic section, only sin? needs to be used
Conic sections can neither be rotated nor translated
Conic sections can be rotated but not translated

24 of 25
If A is a 3 × 4 matrix, B is a 4 × 12 matrix, and C is a 12 × 2 matrix, then ABC is:
13,824.
a 3 × 4 × 12 matrix.
a 3 × 2 matrix.
none of the above, these matrices do not match up.

25 of 25
Suppose that you wanted to use this row [-2 4 6 2 | 14] to eliminate as many elements as possible in this row [2 4 -6 1 | 12]; how would you do this?
Multiply through by -1 and add the rows together
Simply add the rows together
Simply subtract the first row from the second row
Multiply through by 2 and then subtract the first (modified) row from the second row