College-Level Math Sample Questions

Solve the following problems and select your answer from the choices given. You may use the paper you have been given for scratch paper.

College algebra placement (1- 10)

1 Simplify: $2^{\frac{7}{2}} - 2^{\frac{3}{2}} - 2^{\frac{5}{2}}$

a) $2^{-\frac{1}{2}}$

b) $2^{\frac{1}{2}}$

c) 2

d) $2^{\frac{3}{2}}$

e) $2^{\frac{14}{15}}$

2 Solve for x: $\frac{1}{a} - \frac{1}{x} = \frac{1}{b}$

a) $a - b$

b) $\frac{1}{a} - \frac{1}{b}$

c) $\frac{ab}{(b-a)}$

d) $\frac{b-a}{ba}$

e) $\frac{1}{ab}$

3 If $5x^2 - 4x - 2 = 0$ then $\left(x - \frac{2}{5}\right)^2$ is equal to

a. $\frac{54}{25}$

b) $\frac{8}{25}$

c.) 2

d) $\frac{6}{25}$

e) $\frac{14}{25}$

4 Which is the graph of an equation perpendicular to $y = -2x$

a) x-2y=4

b) 2x-y = 2

c) 2x+y = 5

d) x+ 2y= 3

e) 4x+y=2

5 Which is the equation of the line that contains the origin and passes through the point (2, 1)

a) y= 2x

b) y= ½ x

c) y= 2x +1

d) y= x-1

e) $\frac{y}{2} = x = 1$

6 If U is an acute angle in Quadrant 1 and the cosine of U is ½ what is the sin of U

a) 1

b) 0

c) $-\frac{1}{2}$

d) $-\frac{\sqrt{2}}{2}$

e) $\frac{\sqrt{3}}{2}$

7 An apartment building consists of a total of 15 one and two bedroom apartments. The one bedroom unit rents for $280 and the two bedroom unit rents for $350. The total of the receipts for the month for all of the rental units is $4620 a month.

How many two bedroom units are there in the apartment building?

a) 5

b) 6

c) 7

d) 8

e) 9

8 One square has an area of 6 square yards and another square has an area of 216 square yards. How many yards of fencing would be needed to completely enclose each square separately?

a) $4\sqrt{222}$ yards

b) $148\sqrt{6}$ yards

c) 168 yards

d) $56\sqrt{3}$ yards

e) $28\sqrt{6}$ yards

9 If $F\ (x) = 3x + 1$ and $G(x) = \frac{(x-1)}{3}$ Find $F\big(G\ (x)\big)$

a) $\frac{(x-1)}{(\ 9x+3)}$

b) $\frac{9x+3}{(x-1)}$

c) $\frac{10x+2}{3}$

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

e) x

10 If log x = 2 then x =

a) 100

b) 10

c) 1000

d) .1

e) .01

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1. d	3. e	5. b	7. b	9. e
2. c	4. a	6. e	8. e	10. a