

Name _____

Asian University for Women
Mathematics / Quantitative Reasoning
Entrance Test

Show all your work. We are very interested in how you approach a problem, it will be part of the evaluation. Do not use a calculator. Time limit: 1 hour.

I. Numerical Calculations

1. Calculate $112 + 17.2 + 3.48$

2. Calculate $172 \div 0.8$

3. Calculate $\frac{5}{7} - \frac{2}{3}$

4. Express $\frac{3}{8}$ as a decimal

5. Calculate $3 \div 2\frac{1}{2}$

6. Calculate $(-2)^4$

II. Algebra

7. Evaluate $5(2x - 3y)^2$, if $x = 9$, $y = 4$.

8. Simplify $3x^2y + 4xy^2 + 6x^2y + 9xy^2$

9. Reduce $\frac{10x^4}{15x^{12}}$

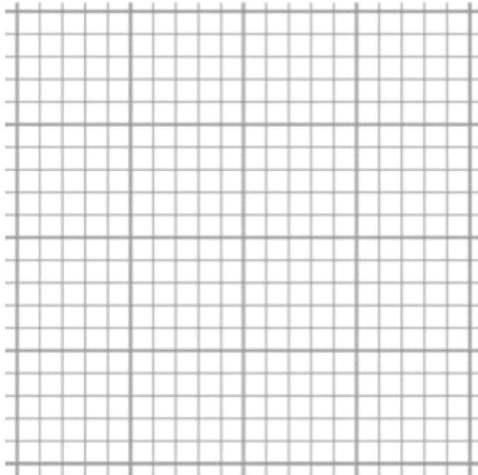
10. Solve for x : $3(2x - 7) = 2(5x + 8) - 7$

11. Solve for x : $x^2 - 9x + 18 = 0$

12. Graph the lines represented by the following equations:

$$2x + y = 11$$

$$3x - y = 9$$



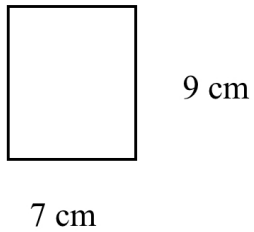
13. What is the solution to the following system of equations?

$$2x + y = 11$$

$$3x - y = 9$$

III. Geometry/Trigonometry

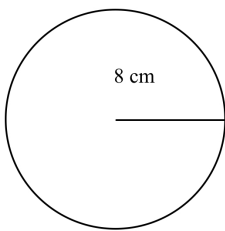
Problems 15 & 16: A rectangle has a width of 7 cm and a height of 9 cm.



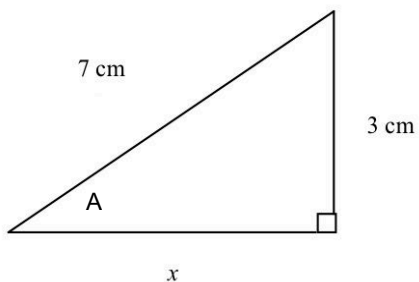
15. What is the perimeter of the rectangle?

16. What is the area of the rectangle?

17. A circle has a radius of 8 cm. What is the area of the circle?



Problems 18 & 19: A right triangle is depicted below.



18. What is the measure of the leg, x ?

19. What is the $\sin A$?

IV. Critical Thinking

20. A group of 4 students go to lunch. The total bill is 1400 taka. They decide to divide up the bill and each pay the same amount. Each student gives the restaurant 500 taka. How much money back does each student receive?
21. In 2002, the population of Bangladesh was approximately 135,000,000 people. In 2007, the population was approximately 150,000,000. If the population continues to grow at the same rate, in what year will the population of Bangladesh be 200,000,000?
22. A student walks 450 meters to class each day. She then walks 250 meters to the next class. The student then walks 500 meters back to the dormitory. She goes to classes 5 days each week. How many meters does the student walk each week going to classes and back to the dormitory?

	EL	AS	MM	CM
Numerical Calculations				
Algebra				
Geometry/Trigonometry				
Critical Thinking				