2019 Math 6A Midterm Exam

1. Which of the following expressions has a variable with an **even** coefficient?

   a. $3x + 5$

   b. $y + 2$

   c. $2a + 1$

   d. $4 + 6$

2. Box the constant & circle the exponent in the following expression.

$$4x^5 + 1$$

3. For the following expressions, solve for the value when x =3 & y =5.

   a. $25 - 6y + 2 - y =$

   b. $\dfrac{3y-3}{4} =$

   c. $3x - 5 + x + 4 =$

   d. $4x + 3x^2 =$

4. Dora is b years old. Boots is 3 years younger than Dora, and Swiper is 4 times as old as Boots.

   a. Express Swiper's age in terms of b.

   b. If Dora is 12 years old, how old is Swiper?

5. Ethan sold some packets of yam seeds at $15 each. A customer paid $234 and received $$d$ change from Ethan.

   a. Express the number of packets of yam seeds the customer bought in terms of d.

   b. If $d = 9$, how many packets of yam seeds did the customer buy?

6. I am thinking of a 3-D figure. It has 2 parallel triangles and 3 lateral rectangular faces. Name this 3-D figure and list how many edges and vertices it has. (Draw it out if you need to.)

7. What is a possible net of the cube shown below? Circle all the answers.
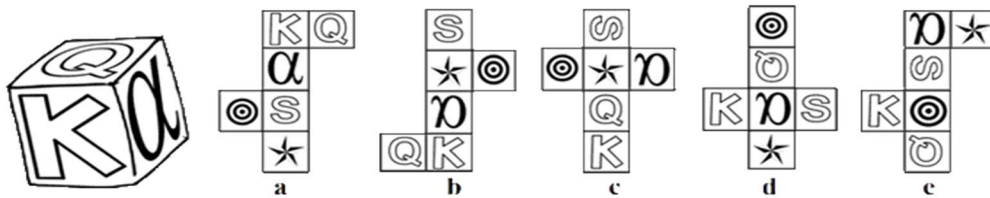
8. Circle the name of the solid that does not belong. (Draw out the solids if you need to.)

    a. Cube

    b. Rectangular prism

    c. Triangular prism

    d. Pyramid

9. A garden measures 6 m in length by 3 m in width. Find the ratio of the length to the width to the perimeter of the garden.

10. In a class, the number of boys is 2/3 of the number of girls. If there are 35 children altogether, how many boys are there?

11. The ratio of the number of Xavier's chocolates to the number of Yao's chocolates is 2 : 3. The ratio of the number of Yao's chocolates to the number of Zach's chocolates is 4 : 7.

    a. Find the ratio of the number of Xavier's chocolates to the number of Zach's chocolates.

    b. If Zach has 42 chocolates, how many total chocolates do Xavier, Yao, and Zach have altogether?

12. Ali and Brenda had an equal amount of money each. After Ali spent $15 and Brenda spent $27, the ratio of Ali's money to Brenda's money was 5 : 3. How much money did each girl have at first?

13. The ratio of boys to girls in math club is 7 : 5. There are 4 more boys than girls. If another 6 girls join math club, what will the new ratio of boys to girls?

14. Solve.

    a. $15 - 2 + 6 \times 6 \div 3 =$

    b. $3.141 = 3 + \frac{14}{100} + \frac{1}{?}$

    c. $15 : 12 = 5 : ?$

Bonus questions

Amy and Bob have $37 together. Bob and Cathy have $30 together. Amy and Cathy have $23 together. How much does each person have individually?

How many of the following nets can be folded into a cube?