Name_____   Date_____

Math 7 Honors   **Final Exam Review #6**

Final Exam – Monday, June 18ᵗʰ (8:00 am)
Directions: Show your work. You may use a calculator.

1. In the morning, a farm worker packed 3 pints of strawberries every 4 minutes. In the afternoon, she packed 2 pints of strawberries every 3 minutes. What was the difference between her morning and afternoon packing rates, in pints per hour?

A   5

B   10

C   40

D   45

2. Kyle used a wire fencing to form a border around a circular region in his backyard. If the radius of the circular region was 5 yards, what was the total length of the border, rounded to the nearest tenth of a yard?

A   15.7

B   31.4

C   78.5

D   157.1

3. A circle has a diameter of 26 units. What is the area of the circle to the nearest hundredth of a square unit?

A   81.68

B   530.93

C   2,123.72

D   8,494.87

4. A hardware store created flyers to advertise their pricing on a certain type of carpet. A portion of the flyer is shown below.

HALLUM HARDWARE
CARPET SALE

Area (square feet)	Cost (dollars)
500	750
1,000	1,500
1,500	2,250
2,000	3,000

If Cailin buys carpet from Hallum Hardware using a 15% discount card, what will be the amount she pays for 700 square feet of carpet, before tax. *Show your work.*
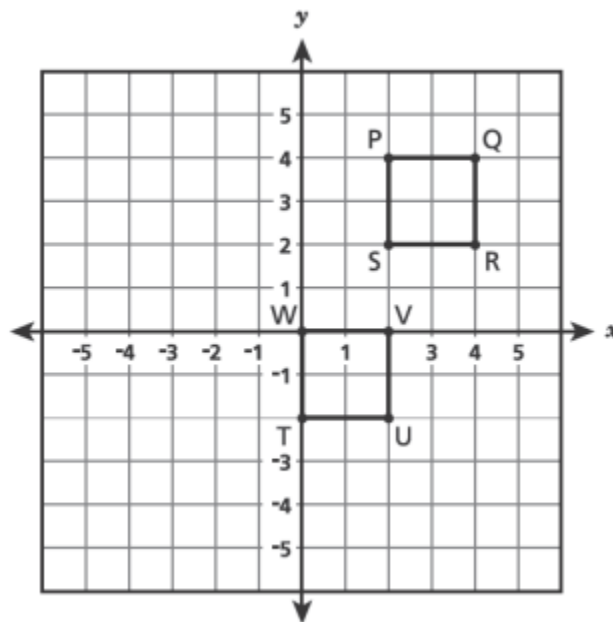
5. A parallelogram with vertices at (0, 3), (2, 0), (4, 2), and (2, 5) is reflected over the y-axis. Which vertex of the parallelogram will have the same coordinates before and after the reflection?

A $(0, 3)$

B $(2, 0)$

C $(4, 2)$

D $(2, 5)$

6. Determine the volume of the figure shown. Write your answer in terms of π. *Show your work.*

9 ft   8 ft

12 ft
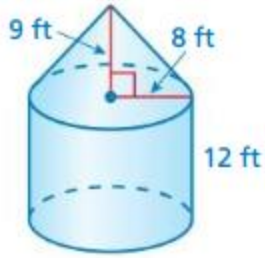
7. Squares PQRS and TUVW are shown below.

Which sequence of transformations of square PQRS shows that square PQRS is congruent to square TUVW?

A   A translation 2 units right and 2 units to the up, then a reflection over the x-axis

B   A translation 2 units right and 2 units to the up, then a reflection over the y-axis

C   A translation 2 units left and 2 units to the down, then a reflection over the x-axis

D   A translation 2 units left and 2 units to the down, then a reflection over the y-axis

8. What value for the constant, h, in the equation shown below will result in an infinite number of solutions?

$$6x + 18 = h(3x + 9)$$

A -2

B -3

C 2

D 3

9. A recycling plant processes an average of $\frac{1}{3}$ ton of glass each minute. At approximately what rate does the recycling plant process glass, in tons per day? $(1\ day = 24\ hours)$

A   20

B   180

C   480

D   4,320

10. A contractor is building the base of a circular fountain. On the blueprint, the base of the fountain has a diameter of 18 centimeters. The blueprint has a scale factor of three centimeters to four feet. What will be the actual area of the fountain base, in square feet, after it is built? Round your answer to the nearest hundredth of a square foot. *Show your work.*

11. Figures P and Q, shown below, are congruent.
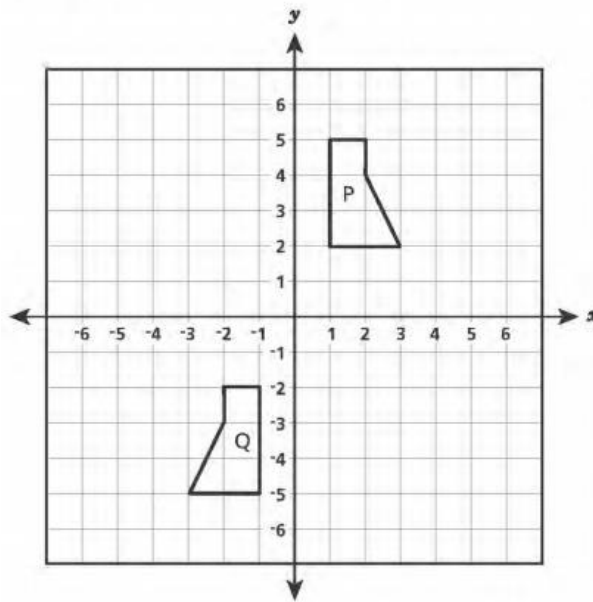
Describe a sequence of transformations that could be used to transform figure P to figure Q.

✎ _____

_____

12. A cylinder has a radius of 3 inches and a height of $4\frac{3}{4}$ inches. A sphere has a radius of 3 inches. What is the difference between the volumes of the cylinder and the sphere, to the nearest tenth of a cubic inch?

A   21.2

B   51.8

C   68.3

D   96.6

13. A school wants to add a coed soccer program. To determine student interest in the program, a survey will be taken. In order to get an unbiased sample, which group should the school survey?

A   Every third student entering the building

B   Every member of the varsity football team

C   Every member in Ms. Frenna's orchestra

D   Every student having a second-period French class

14. A triangle with vertices at A(−1, −1), B(−2, 1) and C(−1, 4) is translated. The image of vertex A' has coordinates at (3, −1). Determine the coordinates of B' and C'.

15. The mean radius of Earth is 6,371.0 kilometers and the mean radius of Earth's Moon is 1,737.5 kilometers. What is the approximate difference in the mean circumferences of Earth and Earth's Moon? Round your answer to the nearest tenth of a kilometer.

A 40,030.2

B 29,113.1

C 14,556.6

D 10,917.0

16. A spinner is divided into eight equal regions as shown in the diagram below. Maya spins the spinner three times.
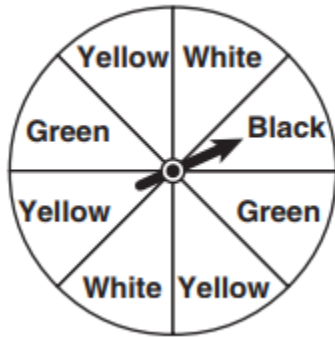

What is the probability all three spins will land on green?
Show your work.

17. Katherine has some blue and black pens in her bag. The number of blue pens she has is three more than twice the number of black pens. She has 42 pens in all. How many blue pens does Katherine have?

A 13

B 15

C 29

D 33

18. A designer created the logo shown below. The logo consists of a square and four quarter-circles of equal size.

3 in   3 in
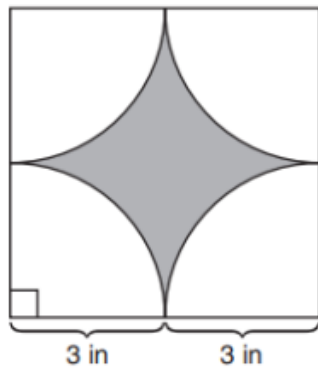
Determine the area of the shaded region in terms of π. *Show your work.*

19. What is the product of $-3x^2y$ and $(5xy^2 + xy)$?

A $-15x^3y^3 - 3x^3y^2$

B $-15x^3y^3 - 3x^3y$

C $-15x^2y^2 - 3x^2y$

D $-15x^3y^3 + xy$