## REVIEW QUESTIONS \#6

(1) Which of the following is the simplified version of this expression?

$$
4(7 x+5)-2(3 x-6)+2^{2}+6^{2} \div 8
$$

A) $22 x+25.5$
B) $22 x+40.5$
C) $22 x+22.5$
D) $22 x+16.5$
(2) What is the total surface area of the following decomposable solid?

A) $144 \mathrm{~m}^{2}$
B) $\quad 112 \mathrm{~m}^{2}$
C) $\quad 96 \mathrm{~m}^{2}$
D) $\quad 64 \mathrm{~m}^{2}$
(3) Which of the following shows a direct proportional situation for graph, table and rule?

Graph
A)

B)

C)

D)


Table

| $x$ | 0 | 1 | 2 | 3 |
| :---: | :---: | :---: | :---: | :---: |
| $y$ | 4 | 6 | 8 | 10 |


| $x$ | 0 | 1 | 2 | 3 |
| :---: | :---: | :---: | :---: | :---: |
| $y$ | 0 | 3 | 6 | 9 |


| $x$ | 0 | 1 | 2 | 3 |
| :---: | :---: | :---: | :---: | :---: |
| $y$ | 0 | 4 | 8 | 12 |


| $x$ | 2 | 4 | 5 | 10 |
| :---: | :---: | :---: | :---: | :---: |
| $y$ | 10 | 5 | 4 | 2 |

$$
y=\frac{20}{x}
$$

(4) The following are the heights of all the students in Mr. Math's history class.

| 140 | 155 | 180 | 164 | 137 | 175 | 167 | 143 | 158 | 179 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 165 | 176 | 168 | 149 | 135 | 154 | 180 | 146 | 135 | 170 |

## Which of the following is false?

A) The mean of this distribution is 161 cm .
B) The range of this distribution is 45 cm .
C) The minimum of this distribution is 135 cm .
D) The maximum of this distribution is 180 cm .
(5) Solve the following algebraic equation (round to the nearest hundredth):

$$
\frac{-7(4 x-9)}{5}=\frac{8(6 x+2)}{3}
$$

(6) Place the following rates in order from slowest to fastest:
a) $0.018 \mathrm{~km} / \mathrm{s}$
b) $1020 \mathrm{~m} / \mathrm{min}$
c) $15 \mathrm{~m} / \mathrm{s}$
d) $57.6 \mathrm{~km} / \mathrm{h}$
(7) Construct a regular octagon with side lengths measuring 3 cm .
(8) The lunch menu at a sandwich shop consists of a combination of options. There are 4 sandwiches (chicken, meatball, ham, and turkey) and 3 drink options (soda, milk and juice) to choose from.

Create a tree diagram to and list all the possible lunch combinations.

## (9) TEACHERSINJEOPARDY

Marc is planning the very popular Teachers in Jeopardy games. Students can select from two games: the Dunk Tank and the Pie Toss. Due to high interest in the games, students are only allowed to choose one.

## Game Descriptions

Dunk Tank:
Soak your teacher in ice cold water if the spinner lands on a prime number.


Pie Toss:
Toss a pie if a token, chosen at random, has a higher value than the average (mean) of all ten tokens.

10


10

10

Marc thinks that the Dunk Tank has the (highest probability of winning)? Is he correct?

## (10) CATERING EXPENSES

Student Council is hiring a catering company to provide food for the end of year celebration. The catering company expenses are:

- The rental of equipment is $\$ 150$
- The catering company charges a rate of $\$ 120 /$ hour

The Student Council's budget for food is $\$ 750$.
You must create a table of values, graph the situation and write the rule.
Due to budget restrictions, what is the maximum number of hours the catering company can be hired for?

## A. Graph the situation


B. Write the rule to solve the equation: $\qquad$
C. The catering company can be hired for a maximum of $\qquad$ hours.

## (1) 1 FLOATING DUCKS

Sandra is planning the "Floating Ducks" game booth. She found instructions to create a $3 \mathrm{~m}^{2}$ rectangular pond which holds 75 rubber ducks. Unfortunately, she only has enough material to build a similar $20000 \mathrm{~cm}^{2}$ rectangular pond.

Rectangular pond from instructions

## Sandra's Rectangular pond

$$
\text { Area }=3 \mathrm{~m}^{2}
$$

Holds 75 ducks


$$
\text { Area }=20000 \mathrm{~cm}^{2}
$$

Holds ? ducks


Diagrams are not drawn to scale

In keeping with proportionality requirements, how many ducks are needed to fill Sandra's rectangular pond?

## (1) (2) TRIANGLE PROJECTION

A triangle is projected on a game board screen. The triangle has a base of 3 cm and a height of 2 cm .

Liane says that if a dilatation scale factor of 5 is applied to the initial triangle, the area of the triangle projected on the screen will be 5 times greater.

Is she right or wrong?


## (1)(3) STAGEDECORATIONS

The band, Limits to Infinity, requests two cylindrical towers as stage decorations.
Both cylindrical towers have the same total surface area but different heights.

- Total surface of each tower is $120 \mathrm{~m}^{2}$.
- The area of the base of the cylindrical tower A is $16.6 \mathrm{~m}^{2}$.
- The radius of cylindrical tower B is 3 less than triple the radius of cylindrical tower A .

Cylindrical tower A


## Tower A

Height $=$ ?
Radius $=$ ?
Area of base $=16.6 \mathrm{~m}^{2}$
Total surface area $=120 \mathrm{~m}^{2}$

Diagrams are not drawn to scale

Cylindrical tower
B


Tower B
Height $=$ ?
Radius $=$ ?
Area of base $=$ ?
Total surface area $=120 \mathrm{~m}^{2}$

What is the height of each cylindrical tower?

