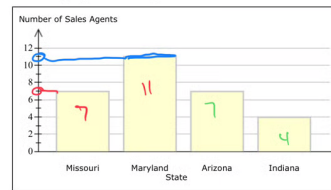# MGF Reviews / Midterm Exam Review

Question 1:

- Interpreting a bar graph

A hardware company has sales agents in 4 states. The number of agents in each state is shown in the bar graph below. Using this bar graph, answer the questions.

Number of Sales Agents

(handwritten values on bars: Missouri 7, Maryland 11, Arizona 7, Indiana 4)

(a) Which state has the most sales agents?
○ Missouri ● Maryland ○ Arizona ○ Indiana

How many sales agents does that state have?
☐ agent(s) *11*

(b) How many more sales agents are in Maryland than in Missouri?
☐ more agent(s) *11 - 7 = 4*

(c) How many states have at most 7 sales agents? *≤ 7*
☐ state(s) *3*

Question 2:

- Word problem with multiplication and addition or subtraction of whole numbers

Show your work on Test Work Page.

Bob brought 16 packs of cola to a party, and each pack had 6 cans. Jina brought 9 cans of juice. How many cans did they bring in all?
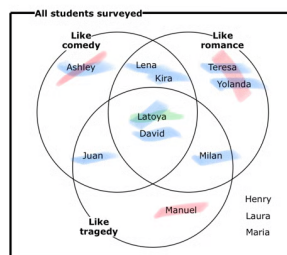
☐ cans

6 + 9 = 15 per pack
16 × 15 = 240

Question 3:

- Interpreting a Venn diagram with 3 sets for a real-world situation

Show your work on Test Work Page.

In a writing course, the professor surveyed the students to see the literature genres they like. The Venn diagram shows this information for three of the genres.

All students surveyed

Like comedy: Ashley, Lena, Kira
Like romance: Teresa, Yolanda
Latoya, David
Juan, Milan
Manuel
Like tragedy
Henry, Laura, Maria

(a) Select all the genres that Latoya likes.
☑ comedy ☑ romance ☑ tragedy

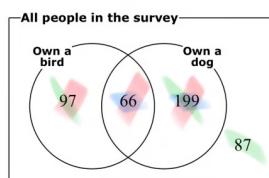(b) How many students like comedy or romance (or both)?
☐ *9*

(c) Which students only like one of the three genres (comedy, romance, or tragedy)? Choose all that apply.
☑ Ashley ○ David ○ Henry ○ Juan ○ Kira
○ Latoya ○ Laura ○ Lena ☑ Manuel ○ Maria
○ Milan ☑ Teresa ☑ Yolanda

Question 4:

- Interpreting Venn diagram cardinalities with 2 sets for a real-world situation

A pet store surveyed 449 people to see how many own a bird and how many own a dog.
The Venn diagram below shows the results. (Each number gives the number of people who fall into that Venn diagram category.)

All people in the survey

Own a bird: 97 | 66 | Own a dog: 199
87

(a) How many of the people own a dog?
☐ people *66 + 199 = 265*

(b) How many of the people own a bird or a dog (or both)?
☐ people *97 + 66 + 199 = 362*

(c) How many of the people do not own both a bird and a dog?
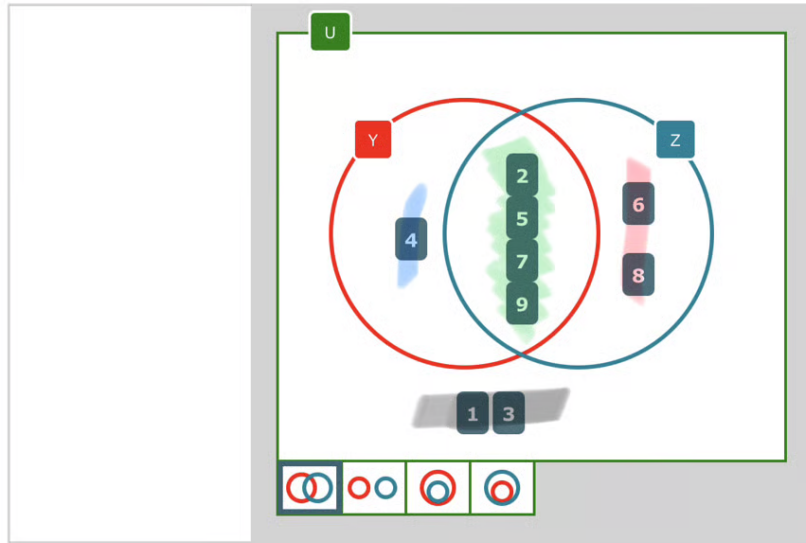☐ people *97 + 199 + 87 = 383*

Question 5:

- Constructing a Venn diagram with 2 sets

Construct a Venn diagram illustrating the sets below.

$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$
$Y = \{2, 4, 5, 7, 9\}$
$Z = \{2, 5, 6, 7, 8, 9\}$

Question 6:

- U.S. Customary length conversions involving rounding decimals

Show your work on Test Work Page.

Question 7:

- Choosing metric measurement units

(a) Scott drank about 200 [milliliters ⌄] of juice with lunch.   *other option is L. 200 L would be 100 2 Lters*

(b) The opening of the drinking straw was about 6 [millimeters ⌄] wide.   *Super small*

(c) Rachel saw an elephant at the zoo. The elephant's mass was about 4000 [kilograms ⌄].   *so heavy!*

Question 8:

- Metric distance conversion with decimal values
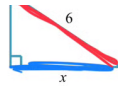
Show your work on Test Work Page.

Question 9:

- Similar right triangles

Find the length x.
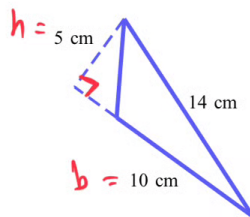
2.5

3

☐

6

$$\frac{x}{2.5} = \frac{6}{3}$$

Show your work on Test Work Page.

Question 10:

- Area of a triangle

Find the area of the triangle below. Be sure to include the correct unit in your answer.

If necessary, refer to the list of geometry formulas.

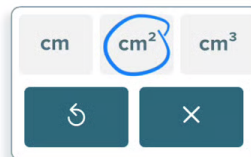h = 5 cm

14 cm

b = 10 cm

$A = \frac{1}{2} bh$

base & height always meet at the right angle

$A = \frac{1}{2} (10 \, cm)(5 \, cm)$

$A = 25 \, cm^2$

cm	cm²	cm³

↺   ✕

Question 11:
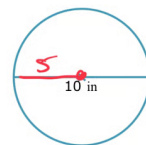
- Area of a circle

Show your work on Test Work Page.

The diameter of a circle is 10 in.

Answer the parts below. Make sure that you use the correct units in your answers.
If necessary, refer to the list of geometry formulas.

radius is half of the diameter

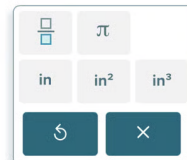$d = 2r$ or $r = \frac{d}{2}$

$\frac{10}{2} = 5$

5

10 in

(a) Find the exact area of the circle. Write your answer in terms of π.

Exact area:

(b) Using the ALEKS calculator, approximate the area of the circle.

To do the approximation, use the π button on the calculator, and round your answer to the nearest hundredth.

Approximate area:

□/□	π
in	in²	in³

↺   ✕

$16 + 9 = 15$ per pack

$16 \times 15 = \boxed{240}$

Henry
Laura
Maria } Didn't like any genre

2 - Show your work. If using the calculator, write what you put into the calculator.

3 - List the words that were not included in the study but not part of the three main subjects.

$$\frac{50.76 \text{ ft}}{} \Big| \frac{12 \text{ in}}{1 \text{ ft}}$$

$$50.76 \times 12 = \boxed{609.12 \text{ in}}$$

900 m to Km

K   H   D   *Meter*   D   C   M

☆   900

6 to the left

0.0 0 0 900 = $\boxed{0.0009 \text{ km}}$

6 - Show your work. If using the calculator, write what you put into the calculator.

8 - Show your work. If using the calculator, write what you put into the calculator.

$$\frac{X}{2.5} = \frac{6}{3}$$

$$3x = 2.5(6)$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$\boxed{x = 5}$$

$$A = \pi r^2 \qquad r = 5$$

$$A = \pi 5^2 = 25\pi \text{ exact}$$

$$\text{Approx} = 78.54$$
(use calculator)

9 - Show your work. If using the calculator, write what you put into the calculator.

11 - In your own words, what is the difference between circumference and area?