

## 1st Semester Exam Review -- Gateway to Technology 2017-2018

### I- Fill in the blanks with the correct letter.

- |                              |                         |
|------------------------------|-------------------------|
| A. Thousandths               | M. Center line          |
| B. Step distance             | N. Hidden line          |
| C. Precision                 | O. Object line          |
| D. Top, front and right side | P. Construction Line    |
| E. Orthographic              | Q. Browser              |
| F. Pace                      | R. 3D indicator         |
| G. Fathom                    | S. Horizontal constrain |
| H. Palm                      | T. Dimension constrain  |
| I. Girth                     | U. Project geometry     |
| J. Cubit                     | V. Trim                 |
| K. Hand-span                 | W. Equal constrain      |
| L. Cubit                     | X. View cube            |

- \_\_\_\_\_ 1.) The type of drawing which shows true size and shape is: \_\_\_\_\_
- \_\_\_\_\_ 2.) The typical views shown in an orthographic drawing include: \_\_\_\_\_
- \_\_\_\_\_ 3.) \_\_\_\_\_ is the measurement was used by the Egyptians to build the pyramids.
- \_\_\_\_\_ 4.) The measure from the tip of your pinky to the tip of your thumb when your hand is stretched out is called the \_\_\_\_\_.
- \_\_\_\_\_ 5.) The measurement around one's stomach or your belt measure, was often used to measure a fishing line, is called \_\_\_\_\_.
- \_\_\_\_\_ 6.) The measure from fingertip to fingertip when your arms are stretched sideways as far as they will go is called \_\_\_\_\_.
- \_\_\_\_\_ 7.) The measure of distance from one step to another used by the Roman army to judge speed is known as \_\_\_\_\_.
- \_\_\_\_\_ 8.) The *width* of your four fingers when they are placed together is called \_\_\_\_\_.
- \_\_\_\_\_ 9.) The measure from your elbow to the tip of your middle finger when your arm is extended is the \_\_\_\_\_.
- \_\_\_\_\_ 10.) I am a thin line that serves as a guide while sketching or drawing.
- \_\_\_\_\_ 11.) I am a line that is used to indicate the axis of symmetry for a part or feature
- \_\_\_\_\_ 12.) I am a line that represents an edge that is not directly visible because it is behind or beneath another surface.
- \_\_\_\_\_ 13.) I am a heavy solid line used on a drawing to represent the outline of an object
- \_\_\_\_\_ 14.) Calipers are used to measure thickness, outside/inside diameters, space width, depth, and \_\_\_\_\_.
- \_\_\_\_\_ 15.) A caliper's reading may be up to \_\_\_\_\_ an inch.
- \_\_\_\_\_ 16.) \_\_\_\_\_ is the degree to which several measurements or calculations show the same or similar results.
- \_\_\_\_\_ 17.) \_\_\_\_\_ causes lines, ellipse axes, or pairs of points to lie parallel to the X axis of the sketch coordinate system.
- \_\_\_\_\_ 18.) \_\_\_\_\_ resizes selected circles and arcs to the same radius and selected lines to the same length.

- \_\_\_\_\_ 19.) \_\_\_\_\_ places measurement in a 2D or 3D sketch and controls the size of a part.
- \_\_\_\_\_ 20.) \_\_\_\_\_ projects edges, vertices, work features, loops and curves from existing objects onto the current sketch plane.
- \_\_\_\_\_ 21.) \_\_\_\_\_ cuts a curve to the nearest intersecting curves or selected boundary geometry.
- \_\_\_\_\_ 22.) \_\_\_\_\_ enables you to click and drag interface and switch and drag between standard and isometric views.
- \_\_\_\_\_ 23.) \_\_\_\_\_ maintains the history of the part, assembly or drawing creation.
- \_\_\_\_\_ 24.) \_\_\_\_\_ shows the direction of X,Y,Z coordinates.

## II= True/False

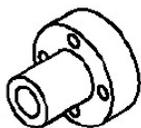
*Indicate whether the statement is true or false.*

- \_\_\_\_\_ 25.) The dial caliper, steel rule, tape measure, and micrometer are all precision measuring tools.
- \_\_\_\_\_ 26.) Science is the study of how humans develop new products to meet needs and wants.
- \_\_\_\_\_ 27.) STEM stands for Simulation Technology and Electronic Mechanisms.
- \_\_\_\_\_ 28.) An engineering notebook is a place where an organized piece of best work is stored.
- \_\_\_\_\_ 29.) Accuracy is the condition or quality of being true, correct, or exact; the degree of correctness of a quantity or expression.
- \_\_\_\_\_ 30.) Tangent constrains a curved surface to a plane or another curved surface.
- \_\_\_\_\_ 31.) The concentric constrain causes two circles or ellipses to have the same diameter.
- \_\_\_\_\_ 32.) Dimensions should NOT be duplicated, nor should the same information be given in two different ways.
- \_\_\_\_\_ 33.) A polygon creates an ellipse using a center point, and major and minor axes.
- \_\_\_\_\_ 34.) A profile is an outline of something as seen from the top view only.
- \_\_\_\_\_ 35.) Innovations are improvements made to an invention.
- \_\_\_\_\_ 36.) An engineer is a person who is trained in and uses technological and scientific knowledge to solve practical problems.
- \_\_\_\_\_ 37.) Technology is the way people use resources to meet their wants and needs
- \_\_\_\_\_ 38.) Holes should NOT be located and sized in the view that shows the feature as a circle.
- \_\_\_\_\_ 39.) Engineers use design briefs to explain the problem, identify solution expectations, and establish project constraints.
- \_\_\_\_\_ 40.) Prototype is a full-scale sketch used to present a design concept by making actual observations and necessary adjustments.
- \_\_\_\_\_ 41.) Design teams use brainstorming techniques to generate large numbers of ideas in a short amount of time, striving for quantity, not quality.
- \_\_\_\_\_ 42.) Three-dimensional computer modeling uses descriptive geometry, geometric relationships, and dimensions to communicate an idea or solution to a technological problem.
- \_\_\_\_\_ 43.) Engineers use a design process to create solutions to existing problems.
- \_\_\_\_\_ 44.) Teamwork does not require much communication to achieve the goal at hand.

## III- Multiple Choice

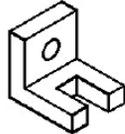
*Identify the choice that best completes the statement or answers the question.*

- \_\_\_\_\_ 45.) What is the correct **FRONT** view in the figure below?

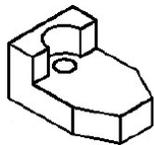




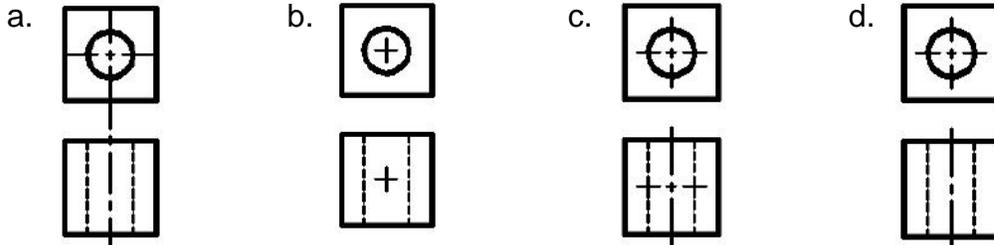
\_\_\_46.) What is the correct **FRONT** view in the figure below?



\_\_\_47.) Which is the correct **RIGHT SIDE** view of the figure below?



\_\_\_48.) Which of the following is the **BEST** example of drawing **CENTER** lines?



\_\_\_49.) The following is NOT an example of physical needs.

- a. basic shelter    b. basic clothing    c. fresh water    d. basic shoes

\_\_\_50.) An engineer keeps a notebook to:

- a. record their thoughts  
 b. record their sketches, pictures and design ideas  
 c. serve as a legal document that supports design development claims  
 d. All the answers are correct

- \_\_\_\_\_ 51.) Which of the following is **NOT** a measuring tool?
- a. caliper
  - b. micrometer
  - c. measuring tape
  - d. cubit
- \_\_\_\_\_ 52.) The following is an example of biological want
- a. Spend time with family
  - b. Nice clothes
  - c. Nice car
  - d. Fancy food
- \_\_\_\_\_ 53.) The process of gathering and storing data to be used in various forms is known as \_\_\_\_\_.
- a. Manufacturing Technology
  - b. Nanotechnology
  - c. Information Technology
  - d. Biotechnology
- \_\_\_\_\_ 54.) The following are guidelines of an engineering notebook EXCEPT?
- a. Pages cannot be added or removed from notebook
  - b. Entries start at the top of the page
  - c. Loose items and missing pages are acceptable
  - d. Completed entry pages must be signed, dated, and numbered.
- \_\_\_\_\_ 55.) Which of the following is NOT a step of the Engineering Design Process?
- a. Generate Concepts
  - b. Define Problem
  - c. Present Solution
  - d. Test Hypothesis
- \_\_\_\_\_ 56.) The purpose of an orthographic drawing is to
- a. show the object most realistically
  - b. show the object in perspective
  - c. show a quick idea, not necessarily to scale
  - d. show information that only one direction of a view may not be able to
- \_\_\_\_\_ 57.) The purpose of sketching is to:
- a. Communicate ideas
  - b. Show all details
  - c. Show true size and shape
  - d. Accurately describe an object
- \_\_\_\_\_ 58.) Dimensions on drawings are used to show
- a. quantity and location
  - b. size and location
  - c. size and color
  - d. color and location

- \_\_\_\_ 59.) Which phrase **best** describes an isometric drawing?
- The object is drawn at an angle to show more than one view at one time
  - The object vanishes to 2 points on the horizon line
  - The drawing has multiple views
  - The object appears to be round with many dimensions

- \_\_\_\_ 60.) Hidden edges are indicated by:
- alternate, long and then short, dash lines.
  - thick, dark, solid lines.
  - two short dashes followed by one long dash.
  - uniform  $\frac{1}{8}$  inch long dashes.

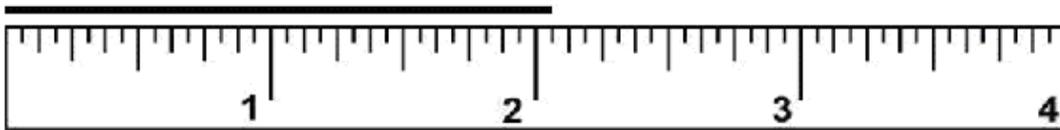
- \_\_\_\_ 61.) What is the importance of using the precise input toolbar?
- It will let the user put geometric constrain on an object.
  - It allows the user to create a work plane on the surface of the object.
  - Allows the user to specify coordinates when creating a sketch.
  - It checks the accuracy of the 2D sketch.

- \_\_\_\_ 62.) Which of the following is NOT the purpose of assembly constraints?
- Define how parts relate to each other
  - Restrict the movement between parts
  - Create a presentation of the drawing
  - Assemble inventor parts

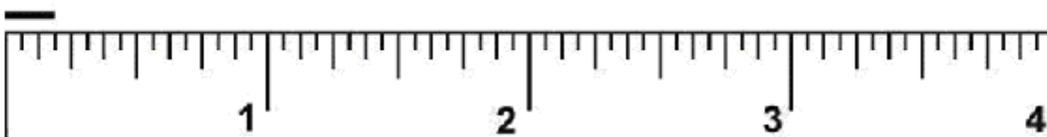
- \_\_\_\_ 63.) Which of the following is NOT true on using the browser in assembly constraints?
- Left click will automatically fix all the errors in the assembly
  - Right click and select delete to remove a constraint
  - Expanding a part file in the browser will show the applied constraints
  - To edit, slowly hover mouse over the constraint to identify it

- \_\_\_\_ 64.) The following statements are correct when you click the right mouse button except;
- Enables the user to select icons, menus and graphics
  - Brings up additional options
  - Accepts default options
  - Ends a process

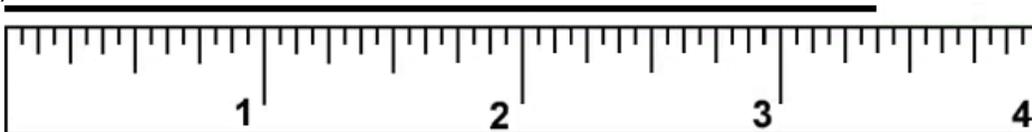
\_\_\_\_ 65-67.) What is the length of the line in inches?



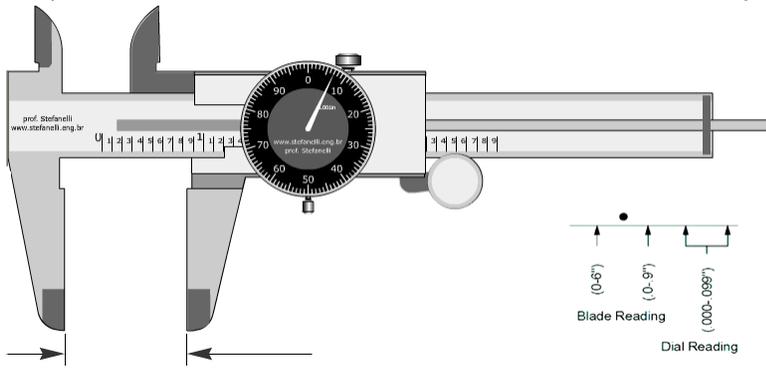
\_\_\_\_ 66.) .



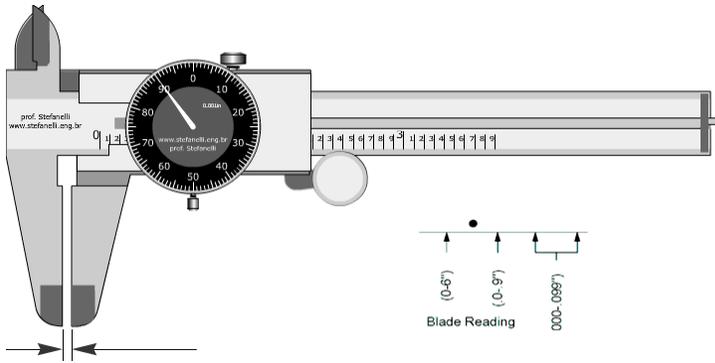
\_\_\_\_ 67).



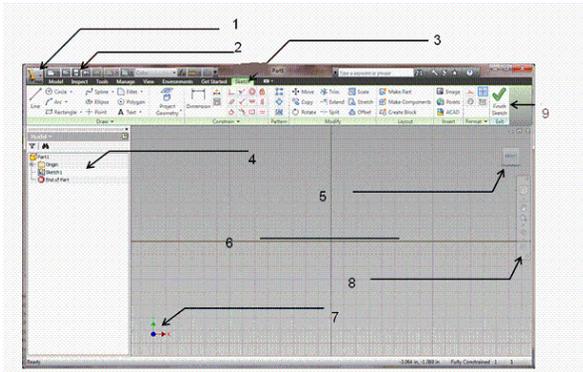
\_\_\_\_\_ 68-69). What is the correct measurement of the dial caliper's reading?



\_\_\_\_\_ 69.).



**IV-Identification**



70-78.) What is the name of part 1 of the screen shown above?

- \_\_\_\_\_ 70.) Part 1
- \_\_\_\_\_ 71.) Part 2
- \_\_\_\_\_ 72.) Part 3
- \_\_\_\_\_ 73.) Part 4
- \_\_\_\_\_ 74.) Part 5

- \_\_\_\_\_ 75.) Part 6
- \_\_\_\_\_ 76.) Part 7
- \_\_\_\_\_ 77.) Part 8
- \_\_\_\_\_ 78.) Part 9

**79-99.) Identify the following symbols.**

\_\_\_\_\_ 79.)



\_\_\_\_\_ 80.) 

\_\_\_\_\_ 81.) 

\_\_\_\_\_ 82.) 

\_\_\_\_\_ 83.) 

\_\_\_\_\_ 84.) 

\_\_\_\_\_ 85.) 

\_\_\_\_\_ 86.) 

\_\_\_\_\_ 87.) 

\_\_\_\_\_ 88.) 

\_\_\_\_\_ 89.) 

\_\_\_\_\_ 90.) 

\_\_\_\_\_ 91.) 

\_\_\_\_\_ 92.) 

\_\_\_\_\_ 93.) 

\_\_\_\_\_ 94.) 

\_\_\_\_\_ 95.) 

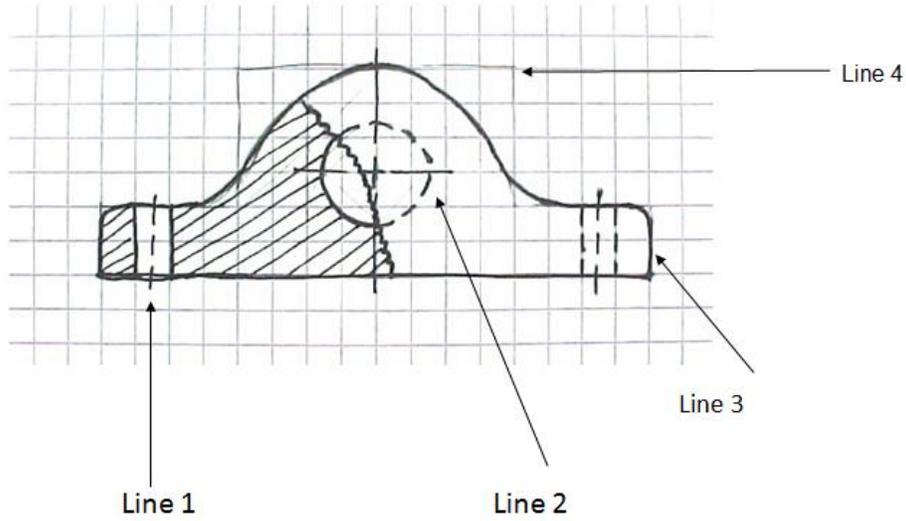
\_\_\_\_\_ 96.) 

\_\_\_\_\_ 97.) 

\_\_\_\_\_ 98.) 

\_\_\_\_\_ 99.) 

100-102.) Identify the following types of lines.



\_\_\_\_\_ 100.) Line 1

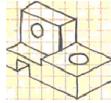
\_\_\_\_\_ 102.) Line 3

\_\_\_\_\_ 101.) Line 2

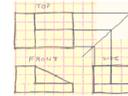
\_\_\_\_\_ 103.) Line 4

104- 107- Identify the following sketches. Write Isometric, one-point perspective, two-point perspective, Orthographic Sketch and thumbnail sketch on the space provided.

\_\_\_\_\_ 104.)



\_\_\_\_\_ 107.)



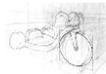
\_\_\_\_\_ 105.)



\_\_\_\_\_ 108.)

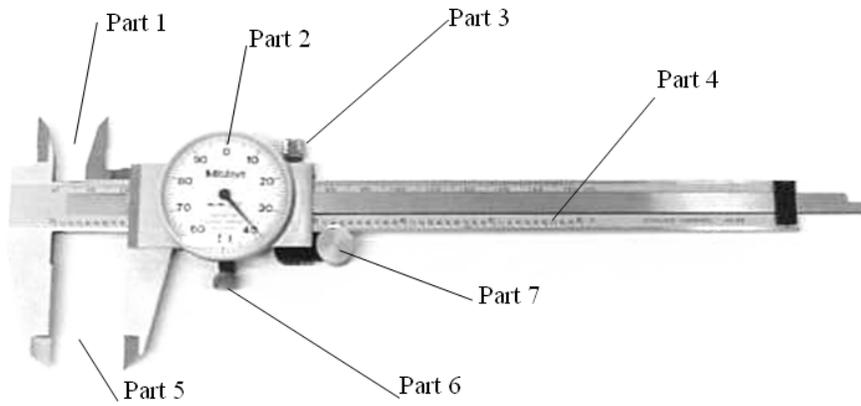


\_\_\_\_\_ 106.)



109- 115) Identify the parts of the caliper.

## Dial Caliper Parts



\_\_\_\_\_ 109) Part 1

\_\_\_\_\_ 110) Part 2

\_\_\_\_\_ 111) Part 3

\_\_\_\_\_ 112) Part 4

\_\_\_\_\_ 113) Part 5

\_\_\_\_\_ 114) Part 6

\_\_\_\_\_ 115) Part 7

