## 1.1

1. Please complete the following sentence.

Technical drawings are two dimensional representations of detailed information defining something’s *size, shape, form,* and *material*; they may also include its relationships to other things.

1. Technical drawings are also sometimes referred to as…
* axonometric or asymmetric drawings
* *mechanical or measured drawings*
* manual or robotic sketches
1. Please complete the following sentence.

Tools for manual technical drawing include pencils and pens, scales, a *compass* and *triangles*, a straight-edge, and *dividers*. Additionally, French curves, scales, templates, erasers, lettering guides, and other specialty items may be used.

## 1.2

1. Please complete the following sentence.

The standard paper size used in Canada, Northern Mexico, and the United States is specified by ANSI, an acronym that stands for *American National Standards Institute.*

1. When considering which sheet size to use, it is most important to understand…
* the designer’s preferred size.
* *the location where drawings will be plotted.*
* the size the firm used on its last project.
* the client’s preferences.
1. Please complete the following sentence.

Before creating a drawing format, check with your firm and also with any *jurisdictional agencies.*

## 2.1

1. List two primary purposes of technical illustration.

*To convey the intent of the designer*

*Serve as a tool for communication*

1. List three phases of the design process which involve sketching.

*Conceptual*

*Schematic*

*Final construction drawings*

 *3-d modeling*

## 2.2

1. Please complete the following sentence.

Isometric, dimetric, and trimetric are three types of *axonometric* drawings.



1. The angles in the drawing shown above identify it as what?
* Oblique view
* *Isometric drawing*
* Perspective drawing
* Orthogonal view
1. List two types of technical illustration discussed in this unit.

*Sketching*

*Axonometric Projection*

## 3.1

1. Please complete the following sentence.

Projections are viewed *perpendicularly* to the picture plane.

1. Views can represent six sides of an object, but how many are usually

needed?

* All six
* *Just three*
* Only two
* Four or five
1. Please complete the following sentence.

Knowing which view(s) to use can save *costs* in time drawing and analyzing.

## 3.2

1. Please complete the following sentence.

ANSI standard specifies use of the *third or 3rd* angle projection view.

1. What does this symbol mean? 

*First or 1st angle projection*

## 3.3

1. Please complete the following sentence.

The technical drafter needs to discern how to best present all the information needed without confusion with the *least* number of drawings.

1. The section cutting away one fourth of symmetrical objects is referred to as...
* a full section cut.
* *an half section cut.*
* a quarter section cut.
* an aligned section cut.
1. Please complete the following sentence.

Cutting sections in *isometric* views may save drawing time and create plans that are easier to read.

## 4.1

1. Please select the correct statement.

Which of the following is a simple definition of dimensioning for technical drawing?

* *accurate notation of measurement*
* clarity for all disciplines
* numerical notation
* measurement of lines
1. Please select the correct statement.
* *Not every drawing includes every line type*.
* Every drawing must include ten line types.
* Five line types are required for proper dimensioning.
* To dimension with clarity, all line types should be of equal weight.
1. Please complete the following sentence.

Hidden lines describe *edges* of an object that are not *visible* in the *view* shown.

## 4.2

1. Please complete the following sentence.

Best practices are a guide for the *placement of dimensions*.

1. Please select the correct statement.
* *The written word has legal priority over numerical and drawn measurements*.
* When dimensioning, all line weights should have equal darkness and thickness.
* Drafters should personalize their dimensioning style.
1. Please answer the following question.

Which type of axonometric drawing is equally dimensioned in all axes?

*Isometric*

## 5.1

1. Please select the correct answer.

Three types of geometry for surface specification are actual, measured, and…

* *nominal.*
* numeral.
* numerical.
* linear.
1. Please select the correct statement.
* *All machine processes have deviations*.
* Some machine processes do not have deviations.
* Machine vibration is the cause of all deviations.
* Roughness is the only deviation requiring specification.
1. Please complete the following sentence.

Directional and locational deviations are *displacement* surface deviations.

## 5.2

1. Please select the correct statement.
* *The surface symbol may be on the dimension line.*
* The surface symbol must always be on the dimension line.
* The surface symbol must never be on the dimension line.
* The surface symbol is only placed on the specification note.
1. Please complete the following sentence.

Surface symbols describe material removal as *inadmissible*, or *required,* or *optional.*

## 6.1

1. Please complete the following sentence.

Ideal dimensions are also known as *basic, nominal,* and *theoretically exact* *dimensions* (TED).

1. Please select all geometric characteristics that require tolerancing.
* *form*
* size
* *profile*
* *orientation*
* *location*
1. Please complete the following sentence.

The feature control frame includes information identifying the tolerance symbol, and *tolerance value*, *modifiers*, and *datum*.

## 6.1

1. Please complete the following sentence.

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The feature control frame includes information identifying the tolerance symbol, and *tolerance value*, *modifiers*, and *datum*.

## 6.2

1. Please complete the following sentence.

Fitting systems benefit interchangeability and must maintain *functionality.*

1. Please select the fundamental tolerance.
* *Clearance*
* Allowance
* Dimensional
1. Please complete the following sentence.

The feature of size is the *geometrical* shape defined by a *linear* or *angular* dimension.

## 6.3

1. Please select the correct answer.

The preferred system for tolerancing shafts and holes is the…

* shaft basis system.
* *hole basis system.*
* basic clearance system.
* basic allowance system.
1. Please select all that apply to tolerancing standards.
* *DIN 7157*
* *ISO 286*
* ISO 9010
* ISO 2740

## 6.4

1. Please select the correct answers.

Tolerance chains resolve problems of…

* *combined tolerances.*
* *tolerance stacking.*
* *accumulated tolerances.*
1. Please select the correct answer.

Two primary methods for calculating tolerance chains are…

* basic and standard.
* *arithmetical and statistical.*
* geometrical and mathematical.

## 7.1

1. Please list three key reasons for companies to use standards.

*It saves time.*

*It saves costs.*

*It allows for interchangeability.*

*It improves communication.*

*It ensures that everyone is working with the same level of expectation.*

1. Please select the correct statements.
* *Standards have been used predominantly since the industrial revolution.*
* *Standards are continually evolving and changing.*
* Standards vary, so it is more important to develop your own.
1. Please complete the following sentence.

The most common standards used in technical drawing were developed by the *ASME* and the *ISO.*

## 7.2

1. Please complete the following sentence.

The best way to determine which standard to use is to *ask*.

1. Please select the correct answer.

As the world becomes less isolated and more dependent on international collaboration, which standard is recommended for international use?

* ASME
* *ISO*
* DIN
* ANSI
1. In general, which standards should be applied in technical drawing?

*Most current standards*

## 7.3

1. Please complete the following sentence.

Standard parts benefit the supply chain because the parts are *interchangeable*.

1. Please select the correct answers.

The use of standard parts benefits the design and production of workpieces because…

* it reduces tolerance limits.
* *it saves time and money.*
* it produces stronger, more precise parts.
* *it offers sustainable solutions.*
* It eliminating need for coupling.

Please name a major disadvantage of using standard parts.

*quality control, cost, lack of innovation, lack of availability*