Q1:

Subject Matter:

Under 35 U.S.C. § 101, patents on processes, machines, manufacture, compositions of matter, or improvements thereof can be obtained. Laws of nature, physical phenomena, and abstract ideas are not patentable (Chakrabarty, Bilski, Alice). In Alice, the Supreme Court established a two-step inquiry into whether a patent claims patentable subject matter. The first step is determining "whether the claims at issue are directed to one of [the] patent-ineligible concepts." The second step is asking whether the claim contains an inventive concept that transforms the claimed patent-ineligible concept to a patentable invention. Here, with respect to the first step, the '123 patent is not directed to a law of nature, physical phenomena, or an abstract idea (Rapid Litigation Mgmt.). The language of the claim clearly shows that it is not directed in this manner (i.e., the patentee does not claim the phenomenon of warming hands with heat, but an apparatus that can be used to warm the hands).

While a challenger to the '123 patent may argue that the concept of using heat to warm something is a physical phenomenon/natural law, the patentee can overcome this challenge by asserting that the patentee is not claiming a physical phenomenon/natural law, but rather claims an application of the physical phenomenon of using heat to warm the user's hands (see Mayo).

Utility:

Utility is another requirement for validity under § 101 and § 112. An invention must have credible/operable utility, practical utility, and beneficial/moral utility. Credible/operable utility is a low standard that simply requires that at the time of filing,

the claimed invention be basically operable. This is typically satisfied as long as the claimed invention is not inherently unbelievable (Brana). Here, given that 1) chemical handwarmers and gloves are used together in various configurations, 2) handwarmers rely on the basic principle of using heat to warm the hands, and 3) the '123 patent itself notes the use of "conventional" handwarmers, the patentee's invention satisfies the credible/operable utility prong.

With respect to practical utility, the claimed invention must have a presently available real-world use (substantial) that is well-defined (specific) (Fisher). Here, the heated glove has a specific use (i.e., to be used "in the winter when a person is doing any activity" to keep the hands and in particular fingertips warm) and that is presently available (i.e., the patentee knows what the heated glove can be used for).

Finally, beneficial/moral utility historically meant that the invention not be of a mischievous or injurious tendency (Lowell). However, courts (e.g., Juicy Whip) have largely left it to Congress to prohibit certain inventions based on beneficial/moral utility (e.g., human cloning). Here, the heated glove is not mischievous or injurious. It is in fact the opposite of injurious (i.e., protecting a user's hands from freezing). Therefore, a challenger is very unlikely to succeed on a utility challenge to the '123 patent.

Enablement:

Under § 112, a patent must enable a person having ordinary skill in the art (PHOSITA) to make and use the claimed invention. In addition to forming part of the basis of the quid pro quo of patent rights, the enablement requirement functions to limit the scope of the claims and prevents patentees from claiming what is not enabled. Furthermore, if undue experimentation is required to make and use the invention, the

disclosure is not enabling (Incandescent Light Bulb). Whether the degree of experimentation is "undue" can be determined by the Wands factors, such as the predictability of the art, the complexity of the art, the state of the prior art, the relative skill of the PHOSITA, the quantity of experimentation necessary, the amount of guidance disclosed, the presence or absence of working examples, and failure rates during experimentation. The Wands factors and the question of undue experimentation are most relevant to inventions involving the chemical and pharmaceutical arts, rather than basic mechanical inventions.

Here, the disclosure of the '123 patent is sufficiently enabling for a few reasons. First, the technology is not complex; the claimed invention is a glove (itself a very basic item) that is configured to receive a convention chemical handwarmer. Second, given that the use of handwarmers generally is known and relies on the basic scientific principle of heat transfer, the art is predictable. Third, the specifications—both the text and the figures—teach how to make and use the heated glove. A PHOSITA reading the specifications would very likely be able to make and use the heated glove. Finally, the claims are commensurate with the scope (Fisher). Claims 1 and 2 do not claim anything that is absent from the specifications. As such, the '123 patent is very likely to survive an enablement challenge.

Written Description:

Written description is another requirement under § 112 which asks whether the disclosure reasonable conveys to a PHOSITA that the inventor had possession of the claimed invention as of the filing date (Ariad). Written description issues most often arise when the claims are extremely broad or if the patentee later amends the claims (or

adds new claims) to include subject matter that was not initially in the disclosure (e.g., Gentry Gallery).

Here, neither issue is present. Pat has neither amended the claims, nor has Pat written very broad claims that would lead a PHOSITA to believe that Pat did not possess the invention at the time of filing. The specifications of the '123 patent disclose a detailed structure of the heated glove (e.g., Figures 1 and 2) accompanied by a detailed description of the various components of the heated glove. Furthermore, the specifications describe how the structure of the heated glove relates to its function (e.g., the support member keeps the ducts open, allowing heat to travel to the fingertips). The claims themselves closely track the structure and function disclosed in the specifications. Therefore, a challenge to the '123 patent based on a lack of written description would likely fail.

Definiteness:

A third § 112 requirement, definiteness requires that the metes and bounds of the claimed invention are clearly defined so as to put the public on notice of what the public may manufacture and/or practice without violating the property right of the patent owner (Permutit). Definiteness is evaluated from the perspective of a PHOSITA and is particularly relevant when a patent includes mean-plus-function elements (MPF) (a claim is indefinite if the means-plus-function element does not have a sufficiently defined structure). To be definite, the claims must—in light of the specifications and prosecution history—inform a PHOSITA about the scope of the invention with reasonable certainty (Nautilus).

Here, upon review of the specifications and the claims, a challenger to the '123 patent may first assert that the patent does not disclose any dimensions with respect to the glove or the "sealable top pocket." However, the patentee could overcome this challenge by stating that the dimensions of the glove are implicitly limited by the range of different hand sizes and the common sizes in which gloves are widely produced (i.e., small, medium, large, and so forth), which a PHOSITA would have skill in. With respect to the dimensions of the "sealable top pocket," while the specifications do not disclose its dimensions, the specifications do disclose an example handwarmer that can be inserted into the pocket (i.e., the JON-WARMER) which is an existing commercial product with known dimensions that a PHOSITA would be aware of.

The second definiteness challenge that a person could make is to the MPF in claim 1, which claims "means for allowing heat to travel . . . ." However, the patentee would likely overcome this challenge because both claim 2 and the specifications disclose a specific structure of this MPF (i.e., the stiff support members).

Novelty:

Under 35 U.S.C. § 102, a claimed invention is not novel if, for example, it is patented, described in a printed publication, in public use, on sale, otherwise available to the public, or filed as a patent before the filing date of the claimed invention. The novelty inquiry is a multi-step inquiry that involves: 1) Defining the critical date, which is the filing date under the AIA, 2) identifying potential prior art references, 3) determining if these references fall under one of the prior art categories of 102(a)(1) or 102(a)(2), 4) determining whether any of the references can be excluded from the prior art under 102(b) and 5) determining if any one of these references contains every element of the

claimed invention. In order for a claimed invention to be considered anticipated (i.e., rendered not novel) under § 102, a single prior art reference must disclose every element of the claimed invention. In addition, the anticipating reference must be enabling (Hafner).

Step 1: Under the AIA, the critical date for the '123 patent is the filing date of the patent application, which is January 1, 2021.

Step 2: The potential prior art references here are the handwarmer advertisements on Amazon, the Chinese patent application, the electricity-powered gloves, the Mitten World (MW) convertible mitten and website, and the Metsy mitten.

Step 3: First, the Amazon advertisements constitute prior art under the "on sale" category under 102(a)(1) because the advertisements appeared in February 2020 which is ~11 months before the critical date here. Second, the Chinese patent application constitutes prior art under the 102(a)(1) category of a "printed publication" because it was published on July 1, 2020, 6 months before the critical date here. Third, the electricity-powered gloves also constitute prior art under the "on sale" category under 102(a)(1) because the gloves were on sale beginning on December 1, 2020, 1 month before the critical date here. Fourth, with respect to both the MW product and website, and the Metsy mitten, there is no date associated with these two references. As such, they will not be discussed further for this § 102 analysis.

Step 4: None of the identified references fall under any 102(b) exceptions because they were not disclosed by or obtained from Pat Holder.

Step 5: The Amazon advertisement, while enabling (shows a person placing a handwarmer into a glove), does not anticipate the claimed invention because it does not

disclose a sealable top pocket for the handwarmer and does not disclose placing the handwarmer on the back of the hand. Instead, it discloses placing the handwarmer directly into the glove into the front of the wearer's hand.

Second, the Chinese patent application also does not anticipate the claimed invention because it is fingerless (rather than the claimed invention which has openings for a wearer's fingers) and it teaches a pouch in the palm of the fingerless hand covering, rather than on the back as in the claimed invention.

Third, the electricity-powered gloves also do not anticipate the claimed invention because it teaches an electric coil on the back of the glove rather than the sealable top pocket of the claimed invention which is meant for a chemical handwarmer.

Thus, none of the prior art references anticipate the claimed invention under § 102.

Pat Holder's Own Use of a Prototype: A claimed invention can also be statutorily barred from being patented if in public use under 102(a)(1) before the critical date. Here, Pat Holder started using the gloves in public at baseball practice on November 1, 2020, which was before the critical date. Thus, a challenger could assert that the '123 patent is invalid based on Pat Holder's own public use of the invention. However, Pat Holder could assert that his use was an experimental use (e.g., see City of Elizabeth). According to the Supreme Court, "such use is not public use . . . so long as the inventor is engaged, in good faith, in testing its operation." Furthermore, as held by the Federal Circuit in Moleculon, courts will likely favor a finding of non-public use if the inventor exerted control over the invention the whole time.

Here, the fact that only Pat Holder exerted control over the final prototype and the fact that Pat Holder experimented by creating several (failed) prototypes over the span of several months both suggest that Pat Holder's use of the prototype during baseball practice was experimental and non-public. Under the Supreme Court's standard in City of Elizabeth, Pat Holder may well succeed in asserting that his personal use of the single prototype was a good-faith effort at testing the glove's operation for its intended purpose (i.e., for baseball) and was a continuation of his process of creating and testing prototype experimentally.

Obviousness:

Under § 103, an invention is obvious "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention" to a PHOSITA in the relevant art. The obviousness inquiry, as established by the Supreme Court in Graham, is a multi-step inquiry involving: 1) Determining the scope and content of the prior art and whether it is pertinent prior art (Clay, Demanski), 2) ascertaining the differences between the prior art and the claims at issue, 3) defining the PHOSITA, and 4) determining the obviousness/non-obviousness of the subject matter, which can include looking at secondary factors such as the commercial success of the claimed invention, a long felt but unsolved need, and the failure of others. It is not enough that a combination of prior art references teaches every element of the claimed invention. A PHOSITA must have some reason to combine the references; for example, it may be obvious to try, or the claimed invention may be a predictable variation of the prior art. A PHOSITA can also

play a gap-filling function here to modify/add elements based on their knowledge and skills in the pertinent art.

Step 1: The pertinent prior art was referenced earlier in this question under the 'Novelty' section. Each of the prior art references are pertinent because they are within the same field of hand-warming devices and exist to solve the same problem of keeping hands warm.

Step 2: The differences between the pertinent prior art and the claimed invention are 1) the handwarmer is placed on the back of the wearer's hand in a sealable top pocket and 2) the sealable top pocket includes ducts that extend over each finger and remain open due to the stiff support members. While the electricity-powered gloves also teach a warming device on the back of the hand, they do not teach a chemical handwarmer.

Step 3: A PHOSITA here is likely a person having ordinary skill in designing and making gloves of different types. The PHOSITA here is likely not required to be someone with advanced degrees or education, given that Pat Holder himself is a baseball player who was able to come up with the invention.

Step 4: The central inquiry here is whether a PHOSITA—in view of the Amazon ads, Chinese patent application, and electricity-powered gloves—would find it obvious to conceive of the claimed invention here. A challenger of the '123 patent may argue that the claimed invention is obvious in view of the electricity-powered gloves because the prior art provides one solution to the problem of heating a wearer's fingers/fingertips, is in some ways structurally similar (e.g., teaches two layers of material), and that it would be obvious to try Pat Holder's variation using chemical handwarmers. A challenger may further assert that it is common sense that creating a passage of heat from the chemical

handwarmer to the fingers would be an effective way of heating the fingers and would lead to an expected result. Under KSR, a challenger could argue that the art is highly predictable and not complex (i.e., compared to other complex industries like pharmaceuticals and the chemical arts). Finally, a challenger can assert that there are very few ways in which a handwarmer can be coupled to a glove (i.e., can either place it in the palm or on the back of the hand/glove).

In response to the challenger, Pat Holder could assert that there is a long felt but unsolved need to be able to deliver heat to the fingertips (as demonstrated by the market research that Pat Holder did), given that cold hands have long been an issue and humanity has tried to develop different ways of warming hands but has failed to develop a practical means of keeping the fingers warm as well. For example, Pat Holder could point to the Amazon ad which shows a wearer simply placing a handwarmer in their palm which, as described, fails to deliver heat adequately to the fingers and fingertips, may be too hot on the skin, and is difficult to fit into gloves which are usually designed to be tight. Pat Holder could further point to the Chinese publication, with is fingerless and does not contemplate heating of the fingers at all. Finally, Pat Holder could point to the electricity-powered gloves as impractical given that they need to be plugged in, which severely limits the wearer's ability to perform any activities; in comparison, Pat Holder's device is meant to be worn during activities like sports and does not restrict the movement of the wearer. There is no combination of these three references that would yield a heated glove with a sealable pouch on the back of the glove with ducts flowing to the fingertips.

Given that obviousness is a highly factual inquiry, it is difficult to conclusively state how a court may rule on this issue. However, based on the facts available here, Pat Holder's invention will likely be rendered obvious based on the limited configurations that a handwarmer and glove combination could have (i.e., a handwarmer can only either go in the palm or on the back of the hand/glove) and the common sense notion that creating a direct, open pathway/passage between the handwarmer pouch and the fingers would allow heat to travel to the fingers more easily.

Priority:

There is no issue of priority because there is no competing patent/patent application here.

Q2:

Infringement—Generally:

Literal infringement under 271(a) states that "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the US or imports into the US any patented invention during the term of the patent thereof, infringes the patent." The claims form the basis of the infringement analysis, wherein an allegedly infringing product must contain each element of the claimed invention. Under the doctrine of equivalents (DOE), similar elements in the allegedly infringing device are compared to the element of the claimed invention (Warner Jenkinson); if such an element in the allegedly infringing device performs substantially the same function, in substantially the same way, to achieve substantially the same result (and all other elements are found in the infringing device literally or also under an equivalent), the infringing device infringes under the DOE (Graver Tank).

Given that the claims of the patent are the focus of infringement, the first step in an infringement analysis is claim construction (Markman), whereby intrinsic (specifications, drawings, prosecution history) and, when required, extrinsic (dictionaries, expert evidence, inventor declarations) can be used to construe the claims (Phillips). Below are the elements of independent claim 1 of the ’123 patent:

- **Inner layer of material:** The specs do not specify a type of material
- **Sealable top pocket**
- **Ducts extending over each finger**
- **Outer layer of material:** The specs specify leather as the material
- **Means for allowing heat to travel from the hand warmer to the top of each fingertip:** A MPF element that is given structure in dependent claim 2 (stiff support member)

Mitten World (MW)—Literal Infringement:

MW does not literally infringe the ’123 patent with respect to its sale of the fingerless convertible mitten because it does not contain several of the elements of independent claim 1:

- **Inner layer of material:** The MW product has a single layer of material, which can either be the “inner” layer or “outer” layer.
- **Sealable top pocket:** Pat Holder may assert that the pouch sown on the back of the mitten is a “sealable top pocket.” See the DOE analysis below.
- **Ducts extending over each finger:** Absent in MW’s product.
- **Outer layer of material:** MW’s product only appears to be made of a single layer of material.

- **Means for allowing heat to travel from the hand warmer to the top of each fingertip:** MW's product does not have such means as it does not utilize a handwarmer.

With respect to the image on MW's website, it does not literally infringe the '123 patent because MW is not selling the handwarmers.

Mitten World—Infringement under the Doctrine of Equivalents (DOE):

MW also does not infringe the '123 patent under the DOE with respect to its sale of the fingerless convertible mitten primarily because it is missing elements of the claimed invention, rather than having similar elements that can be tested against the claimed invention under the triple-identity test. In addition, Pat Holder will likely fail in asserting that the pouch for the fingers is a "sealable top pocket" because it fails the triple-identity test. While the function of the pouch in MW's product is to cover the wearer's fingers, the function of the "sealable top pocket" in the '123 patent is to carry a chemical handwarmer.

Metsy—Literal Infringement:

Metsy's product likely does not literally infringe the '123 patent because the structure of the MPF element is different (see below).

- **Inner layer of material:** There is an inner layer of material covering the hands and fingers.
- **Sealable top pocket:** There is a sealable top pocket into which a chemical handwarmer is placed.
- **Ducts extending over each finger:** There are no ducts extending over each finger.

- **Outer layer of material:** Based on the image, there is an outer layer of material (darker material compared to material covering fingers).
- **Means for allowing heat to travel from the hand warmer to the top of each fingertip:** The structure for this MPF element is the placement of the pouch containing the handwarmer on the fingers (rather than the handwarmer remaining on the back of the hand in the '123 patent and the stiff support members which keep the ducts between the pocket and fingers open). Although the pouch could be left on the back of the hand in Metsy's glove, this configuration would not satisfy this MPF element because heat would presumably not travel from the hand warmer to the fingertips.

Metsy—Infringement under the Doctrine of Equivalents (DOE):

To determine whether Metsy's product infringes under the DOE with respect to the MPF element, the triple-identity test must be performed. First, both structures of the MPF element (stiff support members to keep ducts open in the '123 patent and the placement of the pouch on the fingers on the palm-side in Metsy's product) perform the same function of keeping the fingers warm.

Second, with respect to whether Metsy's glove does so in substantially the same way, the fact that Metsy's device also uses a chemical handwarmer in a pouch weighs in favor of concluding infringement under DOE. In response, Metsy may assert that the fact that the location of the handwarmer and pouch is completely different renders the two elements non-equivalent. In this regard, Metsy will likely succeed in asserting non-equivalence because the placement of the pouch on the fingers on the palm-side is structurally different.

Finally, with respect to the result prong of the triple-identity test, while Pat Holder's device and Metsy's device both keep the fingers warm, the location of the handwarmer pouch on the fingers on the palm-side of the wearer's hand results in the wearer not being able to perform any activities with that hand. This is opposite to the result (and objective) of Pat Holder's device, which is designed specifically to allow the wearer to perform activities like playing sports while wearing the glove. As such, Metsy likely does not infringe the '123 patent under the DOE.

Q3:

Induced infringement under 271(b) states that "whoever actively induces infringement of a patent shall be liable as an infringer." Generally, such induced infringement requires that the "inducer" have knowledge of the patent and that the induced acts constitute direct infringement of the patent (Global-Tech). Here, with respect to the fingerless convertible mitten that MW sells, there is no induced infringement because the mittens do not directly infringe the '123 patent. Similarly, with respect to the suggested configuration (i.e., the image) would not constitute direct infringement of the '123 patent by a wearer who adopts the suggested configuration, there is no induced infringement by MW.

With respect to contributory infringement, 271(c) imposes liability on those who offer to sell or sell, or import into the US, a component of a patented invention or process with knowledge that such component does not any substantial non-infringing uses. Here, MW sells fingerless convertible mittens that have a substantial non-infringing use as fingerless convertible mittens, which have been around for many years. As such, even assuming that the suggested configuration in the image would be an infringing configuration, the mittens that comprise a "component" of the infringing configuration have a substantial non-infringing use.

Q4:

The key difference between the AIA and the 1952 Act that is relevant here is that with respect to prior art, the invention date is the critical date. Here, if the conception of the idea for the claimed design is used, then August 1, 2020, is the critical date. If the date of reduction to practice is used, then November 1, 2020, is the critical date. As a result of this difference between the AIA and 1952 Act and irrespective of which date is used (August 1 or November 1), the electricity-powered gloves are eliminated from the prior art for the § 102 and § 103 analyses.

The outcome of the § 102 analysis is unchanged because the claimed invention was not anticipated by the electricity-powered gloves. However, with respect to the § 103 analysis, the absence of the electricity-powered gloves means that the prior art only teaches either placing a handwarmer directly in the wearer's palm while wearing the glove (Amazon ad) or in a pouch in the palm of a wearer's hand of a fingerless glove (Chinese publication). As such, given the long felt but unsolved need to warm the fingers and the complete absence of any prior art directed towards warming the fingers specifically, the '123 patent will likely survive an invalidity challenge under § 103.