Problem 1 *Is the following radical a Type 1 or Type 2 Radical?*

$$\sqrt{-3\,x+5\,e^{x}}$$

Multiple Choice:

(a) *Type 1 (aka only one term within the radical)*

(b) *Type 2 (aka more than one term within the radical)* ✓

Feedback(*`correct`*): *Yes! Since the radicand has more than one term (separated with a plus or minus sign) it is a type 2!*

Problem 1.1 *Can you simplify this radical as it is currently written?*

Multiple Choice:

(a) *Only if the numbers happen to be perfect squares*

(b) *Potentially; depending on the values, since it is a Type 2 it is at least possible to simplify.*

(c) *Not as it is written. Type 2 radicals cannot be simplified without manipulating them first into Type 1 radicals.* ✓

(d) *No, there is never anything we can do to simplify Type 2 radicals.*

Feedback(*`correct`*): *As mentioned in our lesson, the whole point of distinguishing the type 2 vs type 1, is that the radicand of a type 2 radical must be factored (or otherwise manipulated) before we have any hope of simplifying the radical!*

Problem 2 *Is the following radical a Type 1 or Type 2 Radical?*

$$\sqrt{-20\,x^{3}}$$

Multiple Choice:

(a) *Type 1 (aka only one term within the radical)* ✓

(b) *Type 2 (aka more than one term within the radical)*

Feedback(*`correct`*): *Yes! Since this has everything inside looking like it has already been factored (i.e. each term is multiplying every other term) we have that this is a type 1 radical!*

Problem 2.1 *Can you simplify this radical as it is currently written?*

Multiple Choice:

(a) *Only if the numbers happen to be perfect squares*

(b) *Potentially; depending on the values, since it is a Type 1 it is at least possible to simplify.* ✓

(c) *Not as it is written. Type 1 radicals cannot be simplified without manipulating them first into Type 2 radicals.*

(d) *No, there is never anything we can do to simplify Type 1 radicals.*

Feedback(*`correct`*): *Since the original radical's radicand is just one term (a.k.a. it appears "factored" already) we can potentially simplify the radical... there is hope! However, this also depends on the powers of the individual factors in the radicand, as well as the power of the radical. Thus it is potentially something that can be simplified further, but it may already be as simplified as it can get.*

Problem 3 *Is the following radical a Type 1 or Type 2 Radical?*

$$\sqrt{3\,x - 4\,\log\left(x\right)}$$

Multiple Choice:

(a) *Type 1 (aka only one term within the radical)*

(b) *Type 2 (aka more than one term within the radical)* ✓

Feedback(*`correct`*): *Yes! Since the radicand has more than one term (separated with a plus or minus sign) it is a type 2!*

Problem 3.1 *Can you simplify this radical as it is currently written?*

Multiple Choice:

(a) *Only if the numbers happen to be perfect squares*

(b) *Potentially; depending on the values, since it is a Type 2 it is at least possible to simplify.*

(c) *Not as it is written. Type 2 radicals cannot be simplified without manipulating them first into Type 1 radicals.* ✓

(d) *No, there is never anything we can do to simplify Type 2 radicals.*

Feedback(*`correct`*): *As mentioned in our lesson, the whole point of distinguishing the type 2 vs type 1, is that the radicand of a type 2 radical must be factored (or otherwise manipulated) before we have any hope of simplifying the radical!*

Problem 4 *Is the following radical a Type 1 or Type 2 Radical?*

$$\sqrt{8\,e^x \log(x)}$$

Multiple Choice:

(a) *Type 1 (aka only one term within the radical)* ✓

(b) *Type 2 (aka more than one term within the radical)*

Feedback(*`correct`*): *Yes! Since this has everything inside looking like it has already been factored (i.e. each term is multiplying every other term) we have that this is a type 1 radical!*

Problem 4.1 *Can you simplify this radical as it is currently written?*

Multiple Choice:

(a) *Only if the numbers happen to be perfect squares*

(b) *Potentially; depending on the values, since it is a Type 1 it is at least possible to simplify.* ✓

(c) *Not as it is written. Type 1 radicals cannot be simplified without manipulating them first into Type 2 radicals.*

(d) *No, there is never anything we can do to simplify Type 1 radicals.*

Feedback(*`correct`*): *Since the original radical's radicand is just one term (a.k.a. it appears "factored" already) we can potentially simplify the radical... there is hope! However, this also depends on the powers of the individual factors in the radicand, as well as the power of the radical. Thus it is potentially something that can be simplified further, but it may already be as simplified as it can get.*