**Reproductive Technologies**

**CLONING**

* Way to produce a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ identical organism through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ means
* Used to produce plants for many years (using cuttings)
* Public notice: 1997 with birth of first cloned mammal
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* First mammal to be cloned from a somatic cell.
* Since Dolly, scientists have cloned goats, cows, mice, pigs, cats, and rabbits
* Problems:
	+ Many embryos do not survive
	+ Clones can have serious health problems
	+ First mammal to be cloned from a somatic cell

Why Clone?

* To mass produce organisms with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Example: sheep have been engineered to produce human insulin
* To \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lost or deceased family pets
* To repopulate endangered or even \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ species
* Since Dolly, scientists have cloned goats, cows, mice, pigs, cats, and rabbits
* After Dolly, controversy arose surrounding social, moral and ethical use of cloning
* People for cloning think it could be used to replace deceased relatives or harvest organs from a clone to remove the chance of rejection
* To create Dolly, scientists performed the experiment 276 times, which means many failures
* Cloning could be used to add more people to a certain race, political party, religion, background, sex, physical appearance, special talents
* People could select traits for their children
* To harvest organs, would have to kill the clone

**IN VITRO FERTILIZATION**

* Approximately 10% of couples are affected by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* More than ­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ babies have been born since then as a result of using the in vitro fertilization technique
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ baby was used to describe babies born by IVF
* Used for women with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems or males with mild sperm problems
* Costs approximately $15, 000-$20,000
* Only covered in Quebec
* Women take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to prepare their eggs and uterus for pregnancy
* A man’s sperm and woman’s egg are combined in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a lab
* The resulting embryo is transferred to the woman’s uterus to implant and develop
* Usually 2-4 embryos are implanted at a time

**ARTIFICIAL INSEMINATION**

* Sperm is artificially placed into a woman’s cervix or uterus
* Semen to be implanted is “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” in a laboratory, concentrating the semen and removing any harmful chemicals
* The semen is inserted into the woman, and if the procedure is successful, she conceives