

Notes: Use the Google Slides presentation to learn about using an Arm and Claw and fill in the following.

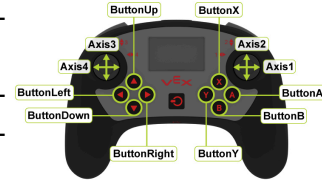
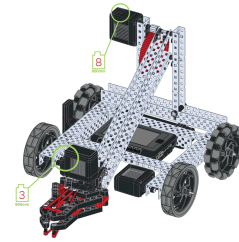
1) Command used to check if a button is pressed:
Controller1.ButtonDown. _____

2) How does an 'if' work?

3) How does an 'else' work?

4) Code Break (Slide 9)

_____ Tank drive with arm control



5) Other commands and descriptions to help with Arm Movement

Command	Description
_____	_____
_____	_____
_____	_____

6) (Slide 17)

___ Level 1: Add arm control to another drive program (Like split arcade)

___ Level 2: (Extra Credit) Use commands from 5) to have the arm raise or lower to a certain height when a button is pressed.

___ ButtonB -> 4" off the ground

___ ButtonA -> 10" off the ground

___ ButtonX -> 15" off the ground

7) Slide 19

___ Demonstrate Arm and Claw control with a Drive Program. (The example shows it with Tank Drive)

8) Fill in the following truth tables for AND (&&) and OR (||)

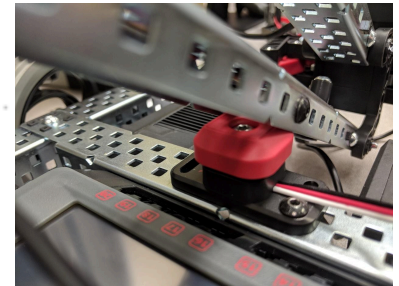
&&	T	F
T		
F		

	T	F
T		
F		

9) _____ Incorporate a bumper sensor to prevent the arm from going too low. (Slide 24)

```
//If Button R1 is being pressed...
if(Controller1.ButtonR1.pressing()){
    //...raise the arm...
    ArmMotor.spin(directionType::fwd, 50, velocityUnits::pct);
}
//...else, if Button R2 is being pressed AND the Arm Bumper is NOT being pressed...
else if(Controller1.ButtonR2.pressing() && !ArmBumper.pressing()){
    //...lower the arm...
    ArmMotor.spin(directionType::rev, 30, velocityUnits::pct);
}
else{
    //...else stop and hold the arm at its current position.
    ArmMotor.stop(brakeType::hold);
}
}
```

Operator Assist – Mechani



10) ____ Incorporate ideal angles to prevent the arm from going too high. (EC)

Autonomous Challenges

- Level 1: ____ Start with a cube preloaded on the robot in the starting zone. Place the cube on top of the net.
- Level 2: ____ Level 1 + pick up a cube from the center line and place it on the net.
- Level 3: ____ Level 2 + pick up a cube from the loading zone and place it on the net.
- Level 4: ____ Level 3 + the robot is contacting the Elevation Bar (Either vertical or horizontal) when it stops.

