

```

const int echoPin = A0;
const int triggerPin = A1;
const int pump = 2;

// establish variables for duration of the ping, and the distance result
// in inches and centimeters:
long duration, inches, cm, tankHeight = 200;

void setup() {
  pinMode(triggerPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(pump, OUTPUT);
  digitalWrite(pump, LOW);
  delay(10000);
}

void loop() {
  // The PING))) is triggered by a HIGH pulse of 2 or more microseconds.
  // Give a short LOW pulse beforehand to ensure a clean HIGH pulse:
  digitalWrite(triggerPin, LOW);
  delayMicroseconds(2);
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(5);
  digitalWrite(triggerPin, LOW);

  // The echo pin is used to read the signal from the PING)): a HIGH pulse
  // whose duration is the time (in microseconds) from the sending of the ping
  // to the reception of its echo off of an object.
  duration = pulseIn(echoPin, HIGH);

  // convert the time into a distance
  cm = microsecondsToCentimeters(duration);
  delay(100);

  if (cm < 30) {
    digitalWrite(pump, LOW);
  }
  else if (cm > 100 && cm < tankHeight) {
    digitalWrite(pump, HIGH);
  }
}

long microsecondsToCentimeters(long microseconds) {
  // The speed of sound is 340 m/s or 29 microseconds per centimeter.
  // The ping travels out and back, so to find the distance of the object we
  // take half of the distance travelled.

```

```
return microseconds / 29 / 2;  
}
```