Name: _____

Assessment
Tally

1) What does a variable do in programming?
   a) Stores a value
   b) Changes the color of the screen
   c) Calculates the speed of the spaceship
   d) Creates a new button

2) What should you do if you want to start counting button presses from zero?
   a) Use the set press count block with a value of 1
   b) Use the set press count block with a value of 0
   c) Use the change press count block
   d) Remove the press count variable

3) What does the repeat while true block do in the program?
   a) It stops the program from running
   b) It loops the code inside it as long as the condition is true
   c) It creates a new button
   d) It changes the variable value

4) Why is the wait until block used in the code?
   a) To stop the program from running
   b) To create a new variable
   c) To wait for a button press before proceeding
   d) To change the button's color

5) How does the program keep track of the time during button presses?
   a) By changing the button color every second
   b) By creating a new button every second
   c) By resetting the press count to zero
   d) By using a timer that stops after 10 seconds

6) How might you use the button press counter program in a real-world application? Describe a scenario where this type of program could be useful.

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7) Imagine you want to add a feature to the button press counter program displaying a message when pressed 10 times. How would you modify the existing code to include this feature?

8) The project code counts the number of times a button is pressed within 10 seconds and plays a sound when the count reaches 6. Imagine you want to play a different sound when the count reaches 3 instead. How would you modify the code to include this feature?

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Answer Key
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1) A - Stores a value

2) B - Use the set press count block with a value of 0

3) B - It loops the code inside it as long as the condition is true

4) C - To wait for a button press before proceeding

5) D - By using a timer that stops after 10 seconds

6) *Example:* The button press counter program could be used in a game where players try to press a button as many times as possible within a specific time limit. This could be useful for creating a fun and competitive game or for testing users' speed and reaction times.

7) *Example:* To display a message when the button is pressed 10 times, you would add an if block to check if the press count variable equals 10. Inside this if block, you would use a print block to show the message. You would place this if block after the change press count block and before the print block that shows the press count.

8) *Example:*

```
## ---- Imports ---- ##
import time
import board
from digitalio import Pull
from piper_blockly import *

## ---- Definitions ---- ##
press_count = None
_clock_start = time.monotonic() + 0.09 # adjust for startup time
def chip_clock():
  global _clock_start
  return time.monotonic() - _clock_start

GP7 = piperPin(board.GP7, "GP7")

try:
  set_digital_view(True)
except:
  pass
```

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```
## ---- Code ---- ##
press_count = 0
while chip_clock() <= 10:
  while not ((not GP7.checkPin(Pull.UP))):
    pass
  while not ((GP7.checkPin(Pull.UP))):
    pass
  press_count = isNumber(press_count) + 1
  print(press_count)
  if press_count == 6:
    playSound("winloose-go1")
  if press_count == 3:  # New feature added
    playSound("winloose-go2")  # Play a different sound when the count
reaches 3
```

Explanation:

To add a feature that plays a different sound when the count reaches 3, we add an `if` statement that checks if `press_count` equals 3. Inside this `if` statement, we use `playSound("winloose-go2")` to play the desired sound. You should replace `"winloose-go2"` with the sound you want to play.