

# Power Up: Math ACT Prep, Week 5

Pacing and Reflecting



**K20**  
L•E•A•R•N



# Essential Question

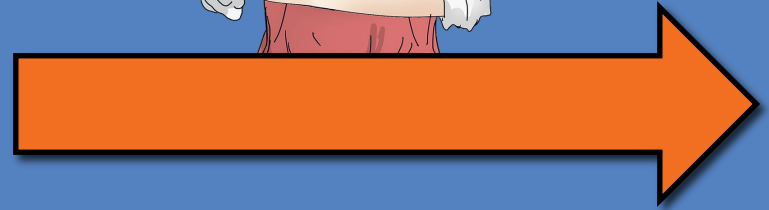
How can I increase my ACT score?



# Learning Objectives

- Analyze why you might guess on an ACT question.
- Evaluate current performance regarding accuracy and pacing.

# Feelings Towards the Math Portion of the ACT



# Attitude Makes a Difference

*“Whether you think you can  
or think you can’t,  
you’re right.”*

– Henry Ford

# Checkpoint Challenge

Leave your paper face down until the timer starts.



10-Minute Timer

# GUS Method



- Next to each question, write the letter or symbol that best represents your feelings towards your answer.



G—Guessed



U—Unsure



S—Sure



# Checkpoint Challenge (Answers)

1) A

6) G

2) F

7) B

3) E

8) J

4) A

9) H

5) G

10) E

# What or How?

Reflect on why you missed what you missed or why you guessed.

- Were you unsure of **WHAT** the question was asking for?
- Were you unsure of **HOW** to do the math?

# Checkpoint Challenge: Question 1

What is the probability of randomly drawing a card that is NOT blue and is NOT yellow?


- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we find the probability of a complement?

$$P = 1 - P(B) - P(Y) = 1 - 0.2 - 0.4 = 0.4$$

# Checkpoint Challenge: Question 2

For what value of  $k$  does the quadratic equation  $x^2 - x + k = 0$  have solutions of  $x = -3$  and  $x = 4$ ?

- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we find the constant of a quadratic if we know the solutions?

$$\begin{aligned}(x + 3)(x - 4) \\ x^2 - 4x + 3x - 12 \\ x^2 - x - 12\end{aligned}$$


# Checkpoint Challenge: Question 3

Given the function  $g$  defined as  $g(x) = 6 - 2x$  has a domain  $\{-2, 0, 1\}$ , what is the range of  $g$ ?

- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we find the range?

$$g(-2) = 6 - 2(-2) = 10$$

$$g(0) = 6 - 2(0) = 6$$

$$g(1) = 6 - 2(1) = 4$$

# Checkpoint Challenge: Question 4

*Data Set A: 32, 39, 48, 50, 50, 61*

How will the mean and the median of Data Set B compare to the median and mean of Data Set A?

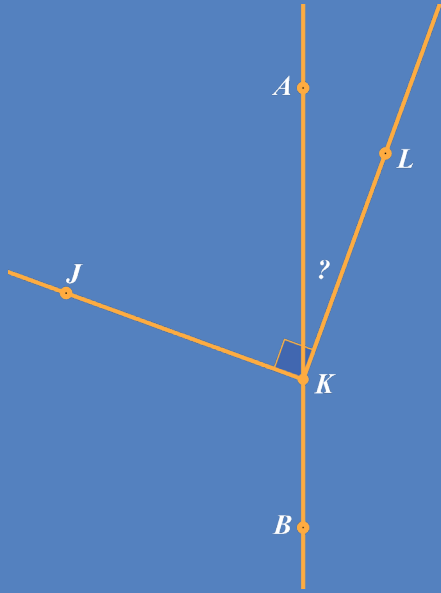
- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we find the mean or median?

$$\text{median}_A : \frac{48 + 50}{2} = 49$$

$$\text{mean}_A : \frac{280}{6} = 46.\bar{6}$$

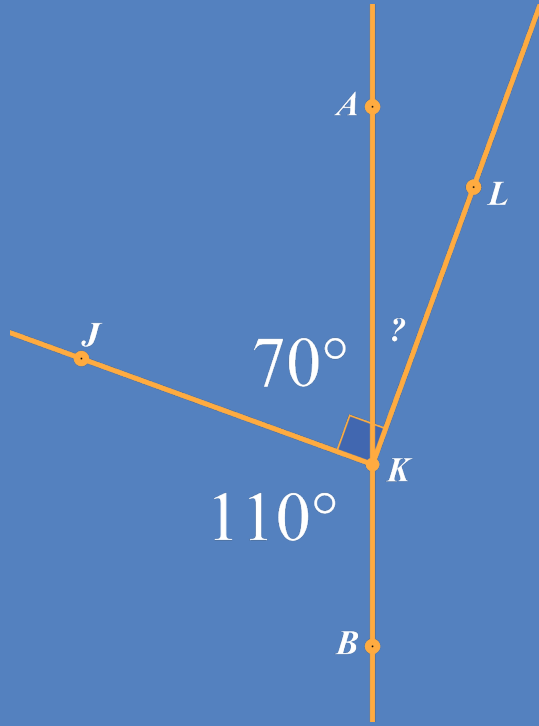
# Checkpoint Challenge: Question 5

If it can be determined, what is the measure of  $\angle AKL$ ?



- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we find the unknown angle?

# Checkpoint Challenge: Question 5



$$\angle JKB + \angle JKA = 180^\circ$$

$$110^\circ + \angle JKA = 180^\circ$$

$$\angle JKA = 70^\circ$$

$$\angle JKA + \angle AKL = 90^\circ$$

$$70^\circ + \angle AKL = 180^\circ$$

$$\angle AKL = 20^\circ$$



# Checkpoint Challenge: Question 6

The statement  $2(x + 7) - x = 10 - (x - 14)$  is true for which of the following?

- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we solve for  $x$ ?

$$2(x + 7) - x = 10 - (x - 14)$$

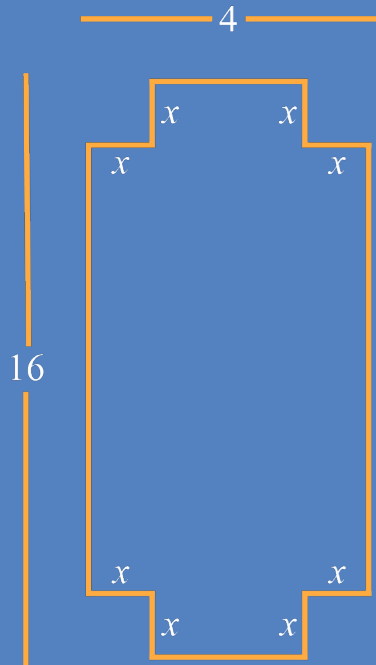
$$2x + 14 - x = 10 - x + 14$$

$$2x = 10$$

$$x = 5$$

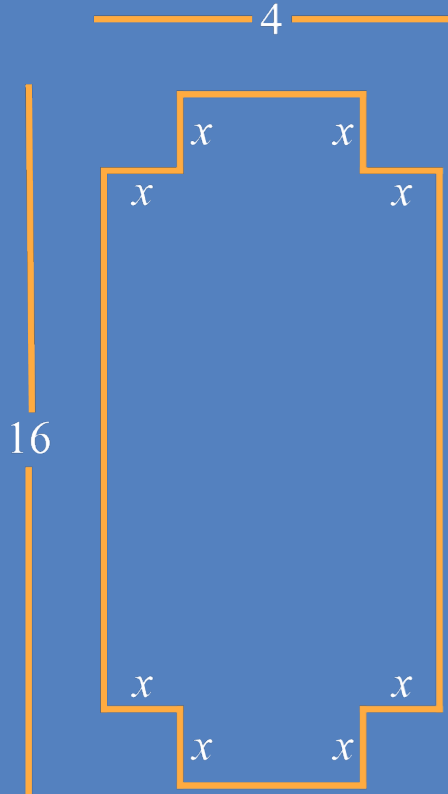
# Checkpoint Challenge: Question 7

In terms of  $x$ , what is the area, in square inches, of the figure?



- **WHAT** in this problem tells us what it is asking for?
- **HOW** do we find the area of a composite figure?

# Checkpoint Challenge: Question 7



$A_1$  = Area of Whole Rectangle

$A_2$  = Area of Removed Squares

$$\begin{aligned} & (A_1) - (A_2) \\ & (4 \cdot 16) - 4(x \cdot x) \\ & 64 - 4x^2 \end{aligned}$$

# Checkpoint Challenge: Question 8

For all values of  $a$  such that  $a < -1$ , which of the following expressions has the greatest value?

- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we compare values?

$$a < -1$$

$$2a < -2$$

$$a + 1 < 0$$

$$-\frac{1}{a} > 0$$

$$\frac{1}{a} < 0$$

# Checkpoint Challenge: Question 9

The solution to the equation  $15 = 7v + 20$  is which of the types of numbers listed below?

- **WHAT** in this problem tells us what it is was asking for?
- **HOW** do we solve for  $v$ ?

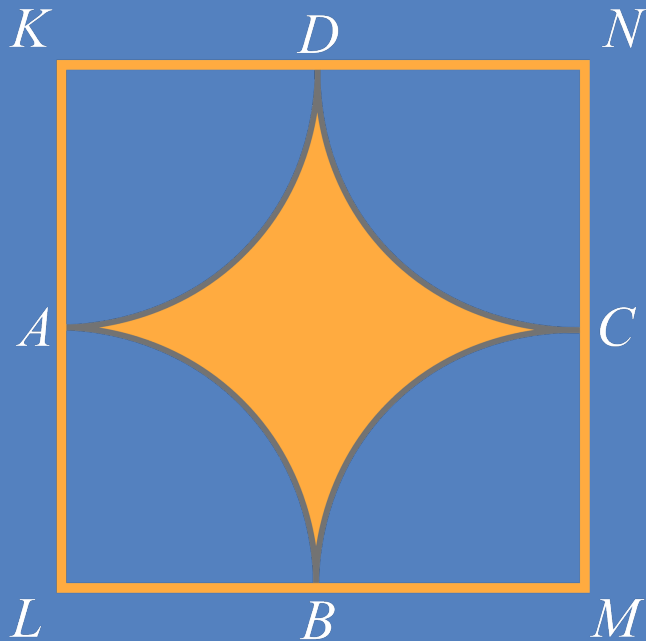
$$15 = 7v + 20$$

$$-5 = 7v$$

$$-\frac{5}{7} = v$$

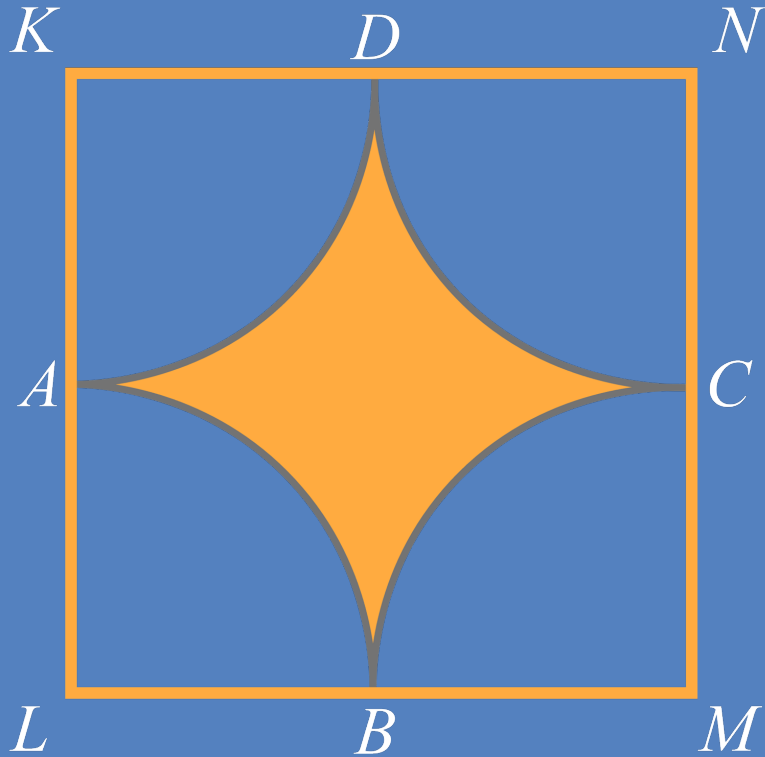
# Checkpoint Challenge: Question 10

What is the area of the shaded region?



- **WHAT** in this problem tells us what it is asking for?
- **HOW** do we find the area of a composite figure?

# Checkpoint Challenge: Question 10

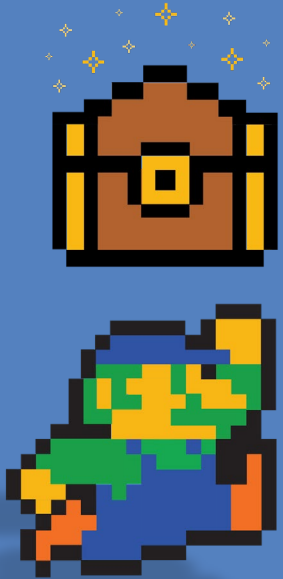


$A_1$  = Area of Whole Square

$A_2$  = Area of Partial Circles

$$\begin{aligned} & (A_1) - (A_2) \\ & (5 \cdot 2)^2 - \pi (5)^2 \\ & 100 - 25\pi \end{aligned}$$

# Take Action



When you guessed, were you mostly unsure due to the **WHAT** or the **HOW** of the question(s)?

- **WHAT:** this likely indicates that you need to work on reading more carefully
- **HOW:** this likely indicates that you need to study in areas that you do not easily recall



# Take Action

- Choose one new action to increase your math score.
- Add the new action to your handout.
- Over the next few weeks, practice your action and add the dates you practiced to your handout to keep track of your progress.



# You Powered Up!

Achievement Unlocked:

*Pacing*



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