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## Universally Designed Assessment Items

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- Jim and Bob workout at the same gym. Jim wants to bench press more than Bob. The sum of weight Jim and Bob bench press is 180 pounds, and if you



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- Use formal language or symbolic representations
- Carry out accurate computations
- Follow multiple steps sequentially
- Make proper use of algorithm and properties

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TEKS 7.11A

The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:

(A) **Model and solve one-variable, two-step equations and inequalities.**

Solve for w:

$$\frac{w + 12}{3} = 20$$

A. 72

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- Ability to formulate a problem in mathematical terms
- Represent problem solving strategically (verbally, symbolically, graphically, or numerically)
- Identify and use strategy necessary to solve problems effectively (e.g. use the distributive property to solve)

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TEKS 7.11C

The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:

(C) **Write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationship.**

B.  $7g + 13 = 43$

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- Think logically about a problem, which requires reflecting on various approaches to solve a problem and deductively selecting an approach
- Rationalize and justify strategies
- Appropriately explain a procedure or concept

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TEKS 3.3H

The student applies mathematical process standards to represent and explain fractional units. The student is expected to:


(H) **Compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models.**




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Strategic		
Easy	The length of John's backyard is 50 feet. Which expression can be used to find the length of John's backyard in inches?	50 · 12
		50 ÷ 12
		50 + 12
		50 · 12
Medium	Jake reads 3 pages in 1 minute. At this rate, which expression can be used to find how many pages Jake can read in 1 hour?	$\frac{1 \text{ hour}}{3 \text{ pages}}$
		$\frac{1 \text{ page}}{3 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hour}}$
		$\frac{1 \text{ min}}{3 \text{ pages}} \times \frac{60 \text{ min}}{1 \text{ hour}}$
		$\frac{1 \text{ min}}{3 \text{ pages}} \times \frac{1 \text{ hour}}{60 \text{ min}}$
Difficult	A class has 12 girls and 16 boys. Which expression can be used to find what percentage of the students in the class are boys?	$\frac{16}{12} \cdot 100\%$
		$\frac{16}{28} \cdot 100\%$
		$\frac{12}{28} \cdot 100\%$
		$\frac{12}{16} \cdot 100\%$

Strategic			
Easy	Jane wants to shade $\frac{1}{4}$ of the model. Which explanation describes why she multiplies $\frac{1}{4}$ by 4?		She is finding an equivalent fraction. She is simplifying the fraction. She is finding a common denominator. She is finding the greatest common multiple.
	Difficult	Which explanation best describes why Model A represents a greater fraction?	The shaded portion of Model A covers more of the total area than Model B.
			The total area of Model A is larger than the total area of Model B.
			The squares are larger in Model A than the squares in Model B.
Medium	Doug has 4 fish and 2 dogs. He buys another fish. How does the additional fish change the ratio of dogs to fish?	The ratio gets smaller because only the denominator increases.	
		The ratio gets larger because the total number of pets increases.	
		The ratio gets smaller because only the numerator increases.	



Assessing Beyond the Algorithm

Assessment Item Development

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- Item writing requires careful consideration of:
  - general item-writing procedures
  - overall content of the items
  - response options in multiple choice items

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- Avoid the complex multiple-choice format. (i.e., A and D, B and C).
- Use plain language.
  - Avoid conditional phrases (if..., then...).
- Keep the language of the stem and response options at the appropriate grade level.
- Minimize examinee reading time.

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- State the stem in question form.
  - If completion format is necessary, do not leave a blank for completion in the beginning or middle of the stem.
- Avoid extraneous information.
- Word the stem positively.
  - If an item must be stated negatively, underline or capitalize the negative word.
- Keep all essential information in the stem.







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- **Assessment and instruction should be considered together** – performance on assessments can inform instruction and assessments can be specifically designed to provide students with opportunities to demonstrate what they've learned during instruction.
  - When designing tests or assessments for use in your classroom, be sure to include items that target

