



THIRD SPACE
LEARNING

6th Grade Arkansas State Practice Math Test

Arkansas Practice Test Grade 6

Grade 6

Questions

Name:

Class:

Date:

Score:

SESSION 1:

No Calculator

Standard: 6.EE.A.1

DOK 2

- 1 What is the value of the expression $\frac{2(8-4)+4^2}{6}$

Answer:_____

Standard: 6.NS.B.3

DOK 1

- 2 Find the quotient.
 $7850 \div 25$

Answer:_____

Standard: 6.EE.A.1

DOK 2

3 Select all that are equivalent to 4.2^3

☐ 4.2×3

☐ $4.2 \times 4.2 \times 4.2$

☐ $4.2 \times 2(4.2)$

☐ $4.2^2 \times 4.2$

☐ $4.2 \times 2 \times 4.2^2$

Standard: 6.RP.A.3

DOK 2

4 Complete the ratio table.

7	21		
5		30	40

Standard: 6.EE.B.8

DOK 2

- 5 Write an inequality that represents the number line below.



Answer: _____

SESSION 2:

Calculator

Standard: 6.RP.A.2

DOK 2

- 6 Jay runs 16.5 miles in 2.2 hours. Select his speed in miles per hour.

☐ 7.5 miles per hour

☐ 0.29 mile per hour

☐ 0.3 mile per hour

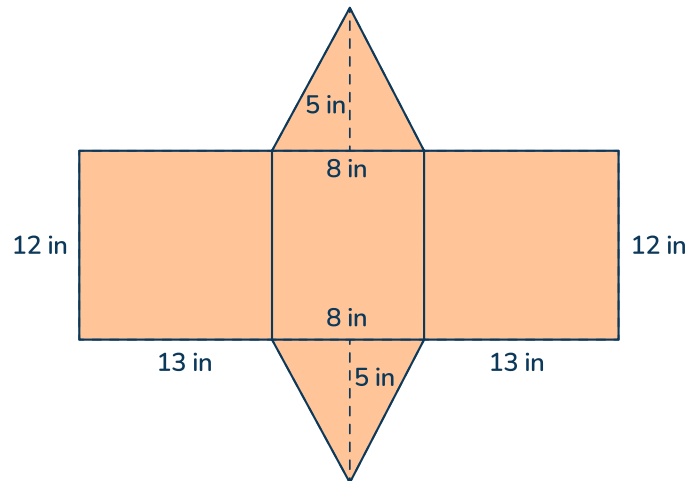
☐ 7 miles per hour

x

Standard: 6.G.A.4

DOK 2

- 7** The net of the triangular prism is below. Find the surface area.



 Answer

Standard: 6.RP.A.1

DOK 2

- 8 The ratio of boys to girls in a 6th grade math class is 2:5. If there are 8 boys, how many girls are there?

Answer:_____

Standard: 6.EE.A.1

DOK 2

- 9 Find the value of the expression $\frac{1}{4}a + c^3$ when $a = 20$ and $c = 2$

 Answer

Standard: 6.RP.A.2

DOK 2

- 10** Devon goes to the store and buys the following:
- 4 pounds of almonds for \$13.12
 - 3 pounds of cashews for \$8.34
 - 5 pounds of chocolate covered pretzels for \$21.40
 - 2 pounds of liquorice for \$5.60

Which food item is the cheapest per pound?

 Answer

Standard: 6.RP.A.3

DOK 2

- 11** 120 students either play field hockey or tennis. If 40% of the students play tennis, how many students play field hockey?

 Answer

Standard: 6.NS.C.7

DOK 2

- 12** Select the answer that has the following in order from least to greatest.
 $|-7|$, $|-9|$, -8 , 0

- ☐ $0, -8, |-7|, |-9|$
- ☐ $-8, 0, |-7|, |-9|$
- ☐ $|-9|, |-7|, 0, -8$
- ☐ $|-9|, -8, |-7|, 0$

Standard: 6.RP.A.1

DOK 2

- 13** There are yellow marbles and green marbles in a bag. The ratio of yellow marbles to green marbles is 2:7. There are 25 more green marbles than yellow marbles. How many yellow marbles are in the bag?

 Answer

Standard: 6.EE.B.8

DOK 2

- 14** Select the values that will make the inequality true.

$$x - 7 > 9$$

- ☐ 16
- ☐ 8
- ☐ 20
- ☐ 9
- ☐ 18
- ☐ 19

Standard: 6.RP.A.3

DOK 3

- 15 Julie keeps a coin collection. She keeps 8 of her oldest coins in a separate box. These 8 coins represent 10% of her collection. What is the total number of coins in Julie's collection?

 Answer

Standard: 6.G.A.1

DOK 2

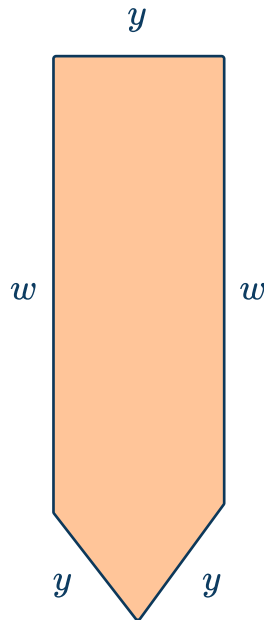
- 16 A rectangular frame has an area of $12 \frac{1}{4}$ inches² and a width of $4 \frac{1}{2}$ inches. Find the length of the frame.

 Answer

Standard: 6.EE.B.6

DOK 2

- 17 Write an expression to represent the perimeter of the irregular figure below.



Answer: _____

Standard: 6.G.A.2

DOK 2

- 18 Find the volume of a cube with side length $2\frac{1}{2}$ cm

Volume = _____

Standard: 6.EE.A.3

DOK 2

19 Select the expressions that are equivalent to $6(7f - 9)$?

☐ $13f - 15$

☐ $13f + 15$

☐ $42f - 54$

☐ $43f + 54$

☐ $-54 + 42f$

☐ $-15 + 3f$

Standard: 6.NS.C.7

DOK 2

20 Two depths below sea level are recorded below. Write an inequality statement comparing the depths.

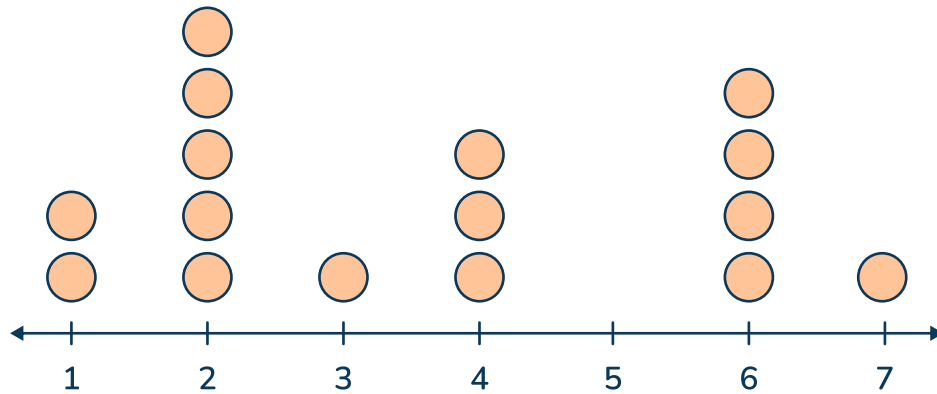
-245 ft and -267 ft

Answer:_____

Standard: 6.SP.A.3

DOK 2

- 21** The dot plot below shows the data of how many cousins 16 students have. Find the absolute value deviation of the data.



 Answer

Standard: 6.RP.A.3
DOK 3

- 22
- The tables below show the amount of time it took Randy and Claudia to pack boxes.
- A. Complete the tables.
- B. If they both maintain this rate, how many boxes will they pack in 35 minutes?
- C. Who has the faster rate?

 Answer

Claudia	
Time (minutes)	Number of boxes
5	4
	8
15	

Rand	
Time (minutes)	Number of boxes
7	6
14	
21	

Standard: 6.EE.B.7

DOK 3

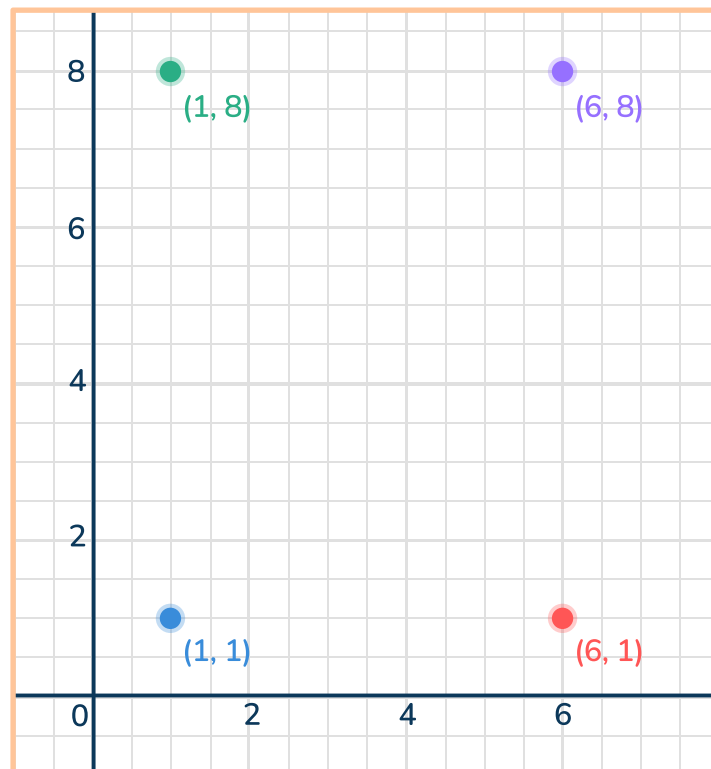
- 23** Jeanie has 16 marbles. This is 4 times as many marbles as Donny has. Write and solve an equation to determine the amount of marbles, m , that Donny has.

 Answer

Standard: 6.NS.C.8

DOK 3

- 24 The graph below represents the coordinates where a farmer puts stakes in the ground to build a fence. What would the perimeter of the fence be?



Rationales

Item	KEY	Rationale
1	4	$\frac{2(8-4)+4^2}{6}$ $\frac{2(4)+4^2}{6}$ $\frac{8+16}{6}$ $\frac{24}{6}$ 4

Item	KEY	Rationale
2	314	$7850 \div 25 = 314$

Item	KEY	Rationale
3	$4.2 \times 4.2 \times 4.2$	$4.2^3 = 4.2 \times 4.2 \times 4.2 = 74.088$
	$4.2^2 \times 4.2$	$4.2^3 = 4.2^2 \times 4.2 = 74.088$

Item	KEY	Rationale
4	7214256 5153040	7 → 21, 7 x 6 = 42, 7 x 8 = 56 5 → 5 x 3 = 15, 30, 40

Item	KEY	Rationale
5	$x \geq -3$	The arrow is pointing right, indicating all the numbers greater than -3. There is a solid point on -3 indicating that -3 is part of the solution.

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Item	KEY	Rationale
6	7.5	$\frac{16.5}{2.2} = 7.5$ miles per hour

Item	KEY	Rationale
7	448 <i>inches</i> ²	There are two triangular faces that are equal. $2 \times (\frac{1}{2} \times 8 \times 5)$ $2(20)$ 40 There are two rectangular faces that are equal. $2 \times (12 \times 13)$ $2(156)$ 312 There is one rectangular face that is 8 x 12. 8×12 96 Add up all the areas: $40 + 312 + 96 = 448 \text{ inches}^2$

Item	KEY	Rationale
8	20 girls	$\frac{2}{5} = \frac{8}{\text{girls}}$ $40 = 2 \times \text{girls}$ $20 = \text{girls}$

Item	KEY	Rationale
9	13	$\frac{1}{4}a + c^3$ $\frac{1}{4}(20) + (2)^3$ $5 + 8$ 13

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Item	KEY	Rationale
10	The cheapest is cashews at \$2.78 per pound	$\$13.12 \div 4 = \3.28 <i>almonds</i> $\$8.34 \div 3 = \2.78 <i>cashews</i> $\$21.40 \div 5 = \4.28 <i>chocolate covered pretzels</i> $\$5.60 \div 2 = \2.80 <i>liquorice</i>

Item	KEY	Rationale
11	72 students play field hockey	$\frac{x}{120} = \frac{40}{100}$ $100x = 4800$ $x = 48$ play tennis $120 - 48 = 72$ 72 play field hockey

Item	KEY	Rationale
12	-8, 0, -7 , -9	$ -7 =7$ $ -9 =9$ -8, 0, 7, 9 is the correct order from least to greatest.

Item	KEY	Rationale
13	10 yellow marbles	$2:7 = 4:14 = 6:21 = 8:28 = 10:35$ The difference between 2:7 is 5 The difference between 4:14 is 10 The difference between 8:28 is 20 The difference between 10:35 is 25 So, there are 10 yellow marbles.

Item	KEY	Rationale
14	20, 18, 19	$x - 7 > 9$ $x > 16$ The values of x must be greater than 16 so the values that work are 20, 18, and 19

Arkansas State Practice Math Test | Grade 6 | Rationales

Item	KEY	Rationale
15	80 coins	10% of 80 is 8 $\frac{10}{100} = \frac{8}{80}$

Item	KEY	Rationale
16	$2\frac{13}{18}$ inches	Area=length x width $12\frac{1}{4} = l \times 4\frac{1}{2}$ $12\frac{1}{4} \div 4\frac{1}{2} = l$ $\frac{49}{4} \div \frac{9}{2} = l$ $\frac{49}{4} \times \frac{2}{9} = l$ $\frac{98}{36} = l$ $\frac{49}{18} = l$ $2\frac{13}{18} \text{ inches} = \text{length}$

Item	KEY	Rationale
17	$Perimeter = 2w + 3y$	$Perimeter = w + w + y + y + y$ $Perimeter = 2w + 3y$

Item	KEY	Rationale
18	$15\frac{5}{8} \text{ cm}^3$	$V = l \times w \times h$ $V = 2\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}$ $V = \frac{5}{2} \times \frac{5}{2} \times \frac{5}{2}$ $V = \frac{125}{8} = 15\frac{5}{8} \text{ cm}^3$

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Item	KEY	Rationale
19	$42f - 54$ $-54 + 42f$	$6(7f - 9) = 42f - 54$ which also equals $-54 + 42f$

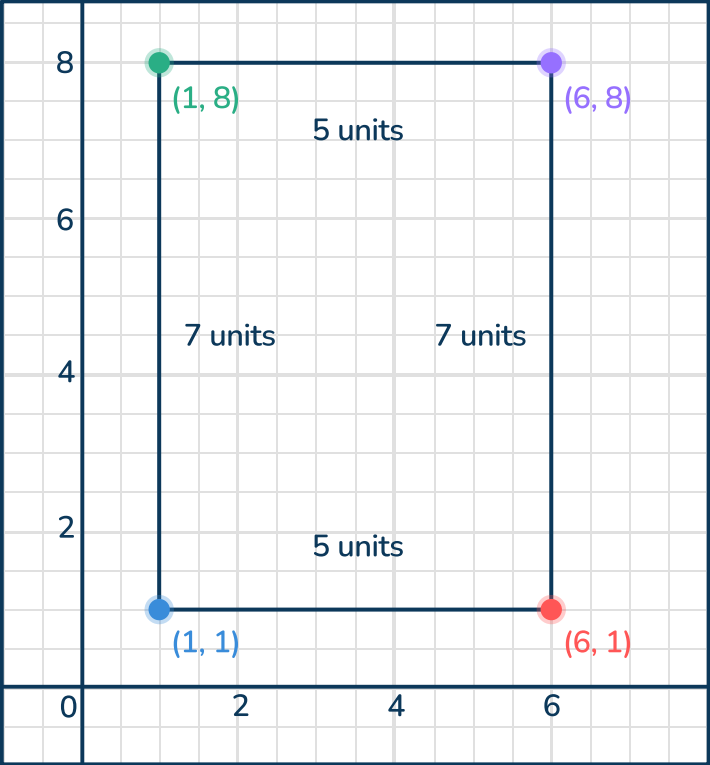
Item	KEY	Rationale
20	$-245 > -267$	-245 is greater than -267 because it is right of -267 on the number line

Item	KEY	Rationale
21	Absolute value deviation = 1.75	Find the mean of the data set which in this case is 3.625 Find the difference between each data set and the mean (taking the absolute value of each difference) Find the sum of all of the absolute value differences and divide it by the amount of numbers in the data set which in this case is 16. $1 - 3.625 = 2.625$ $1 - 3.625 = 2.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $3 - 3.625 = 0.625$ $4 - 3.625 = 0.375$ $4 - 3.625 = 0.375$ $4 - 3.625 = 0.375$ $6 - 3.625 = 2.375$ $6 - 3.625 = 2.375$ $6 - 3.625 = 2.375$ $6 - 3.625 = 2.375$ The sum of the absolute value differences = 28 Absolute value deviation = $28 \div 16 = 1.75$

Arkansas State Practice Math Test | Grade 6 | Rationales

Item	KEY	Rationale
22	Claudia's table: $5 \rightarrow 4$ $10 \rightarrow 8$ $15 \rightarrow 12$ Randy's table: $7 \rightarrow 6$ $14 \rightarrow 12$ $21 \rightarrow 18$ Randy in 35 minutes packs 30 boxes. Randy packs faster	Claudia's table: $5 \rightarrow 4$ $5 \times 2 = 10 \rightarrow 8$ $15 \rightarrow 3 \times 4 = 12$ Randy's table: $7 \rightarrow 6$ $14 \rightarrow 2 \times 6 = 12$ $21 \rightarrow 6 \times 3 = 18$ Claudia = 35 (5 x 7) minutes packs 28 (4 x 7) boxes. Randy = 35 (7 x 5) minutes packs 30 (6 x 5) boxes. Randy packs at a faster rate.

Item	KEY	Rationale
23	$4m = 16$ $m = 4$ Donny has 4 marbles	$4m = 16$ $\frac{4m}{4} = \frac{16}{4}$ $m = 4$ Donny has 4 marbles.

Item	KEY	Rationale
24	Perimeter = 24 units	 Perimeter = 7 + 7 + 5 + 5 Perimeter = 24 units

Breakdown of Assessment				
Ratios & Proportional Relationships	Expressions, Equations, and Inequalities	The Number System	Geometry	Statistics and Probability
33%	33%	17%	12%	5%

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