



THIRD SPACE  
LEARNING

# 7th Grade Illinois Readiness Assessment Practice Test

Practice Test Grade 7

Grade 7

## Questions

Name: .....

Class: .....

Date: .....

Score: .....

### Unit 1 - Section 1

#### No Calculator

12 questions

1 Which expression has the greatest value when  $y = 50$ ?

A.  $y - 10$

B.  $10 - y$

C.  $y - (-10)$

D.  $-10 - y$

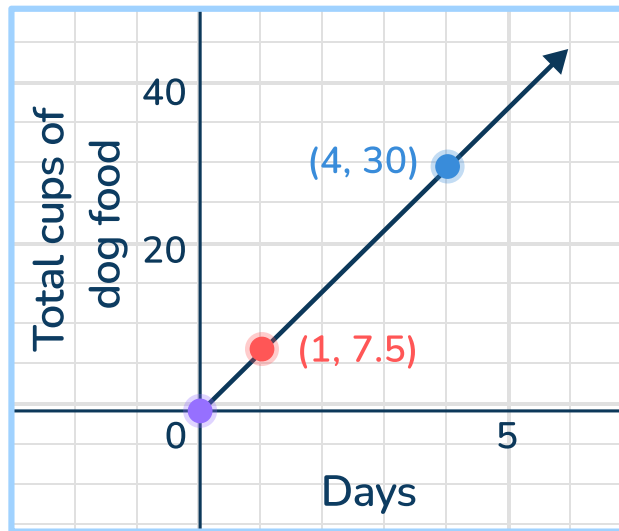
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2 Find the value of  $x$ .

$$3(x - 5) - 6 = -12(6x - 18)$$

Enter your answer in the box.

- 3 Which statements about the graph are true? Select all that apply.



- A. The relationship between days and the total cups of dog food is proportional.
- B. The point (1, 7.5) is the unit rate per day.
- C. The point (4, 30) shows that after 4 days, the total cups of dog food is 30.
- D. The point (3, 23.5) is a point on the line.
- E. As the total cups of dog food increases by 1, the days increase by 7.5.

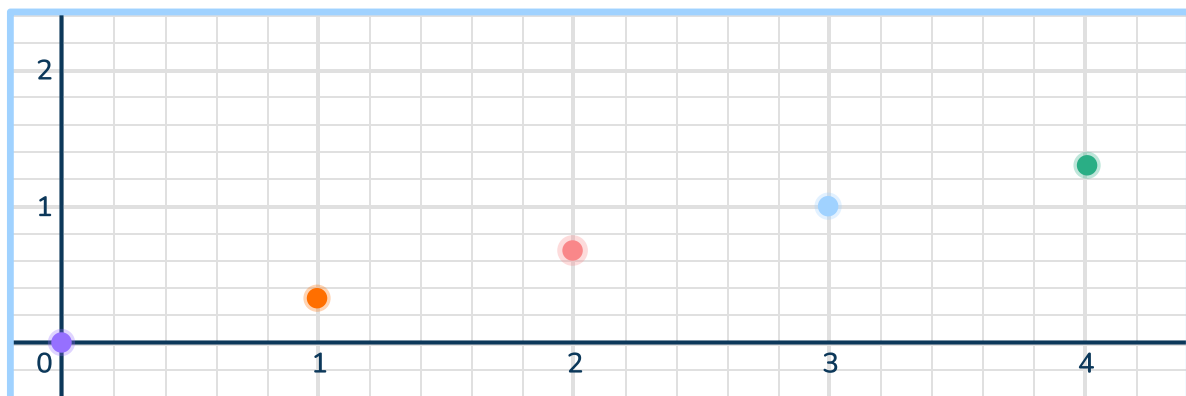
- 4 A pair of shoes that were originally \$66.00 are on sale for 40% off. After the discount and the addition of a 7% sales tax. How much will you pay for the jeans? Select the equation representing the total cost,  $c$ .

- A.  $(66 \times 0.6) \times 1.07 = c$
- B.  $66 \times 0.4 \times 0.07 = c$
- C.  $66 \times 0.4 + 1.07 = c$
- D.  $66 \times 0.6 + 66 \times 0.07 = c$

5 Which expression is equivalent to  $-45x + 9$ ?

- A.  $-3(15x - 3)$
- B.  $9(5x + 1)$
- C.  $-9(-5x + 1)$
- D.  $3(15x - 3)$

6 What is the constant of proportionality for the relationship shown in the graph?



- A.  $\frac{1}{3}$
- B. 5
- C.  $\frac{5}{3}$
- D. 3



- 7 Marta sells bracelets for \$8 each. She has already sold 5 bracelets. She wants to earn at least \$90. Using the variable,  $b$ , to represent the amount of bracelets, select the inequality that represents this situation.

- A.  $5b + 8 \geq 90$
  - B.  $5b + 8 \leq 90$
  - C.  $8b + 40 \leq 90$
  - D.  $8b + 40 \geq 90$
- 

- 8 Lucas bought a subscription to Netflix and ad-free subscriptions to Sportify and YouChube. He spent a total of \$34.50.
- The Netflix subscription cost \$12.50.
  - Both the Sportify and YouChube subscriptions cost the same amount of money.

What amount in dollars did Lucas pay for a subscription to Sportify?

Enter your answer in the box below.

- 9  $\frac{3}{4}$  of a serving has  $\frac{1}{3}$  of a cup of fruit. How many cups of fruit are in 1 serving?

A.  $2\frac{1}{4}$

B.  $1\frac{1}{12}$

C.  $\frac{7}{12}$

D.  $\frac{4}{9}$

- 
- 10 Which equation has a constant of proportionality equal to 3?  
Select all that apply.

A.  $3y = 3x$

B.  $4y = 12x$

C.  $4x = 2y$

D.  $3y = 9x$

E.  $3y = x$

- 11 The weather app indicates that the probability of rain tomorrow is 0.2. Which word is the best description of the likelihood of rain tomorrow?

A. Likely  
B. Unlikely  
C. Certain  
D. Impossible

---

- 12 Two equations are shown below.

- Equation 1:  $\frac{1}{4}(x - 8) = 8$
- Equation 2:  $\frac{1}{4}y - 8 = 8$

Enter the values for  $x$  and  $y$  in the boxes below

The value of  $x$

The value of  $y$

Unit 1 - Section 2

Calculator Permitted

3 questions

- 13 A bag contains red marbles, blue marbles and green marbles. The number of each of the marbles in the bag is as follows:


- 15 red marbles
- 10 blue marbles
- 20 green marbles

What is the probability that the marble selected is NOT green? Use the box below to enter your answer.

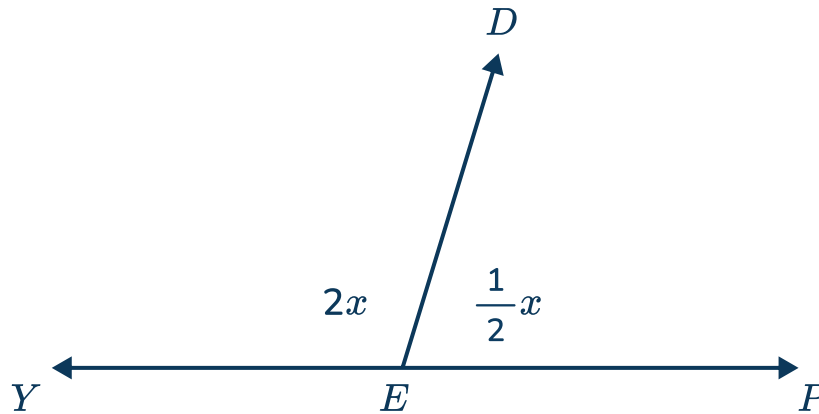
- 14 Anita is solving the two equations below. She says, “I can just solve expression A because expression B will have the same answer.” Do you agree? Why or why not?

- Expression A:  $4 - 6.7$
- Expression B:  $6.7 + (-4)$

Use the space below to explain your answer.

 Answer

- 15 The figure shows line  $YP$  and two angles formed by ray  $ED$ .



**Part A:**

Find the value of  $x$ . Use the box below to enter your answer.

The value of  $x$

**Part B:**

Find the value of angle  $PED$ . Use the box to enter your answer.

The value of angle  $PED$

**Part C:**

Find the value of angle  $YED$ . Use the box to enter your answer.

The value of angle  $YED$

*Unit 2 - Calculator permitted*  
*8 questions*

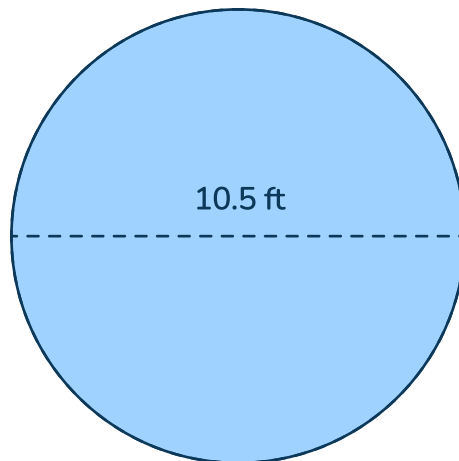
- 1 A store sells a 6-pack of socks for \$15. They also sell an 8-pack of socks for \$16.99. What is the difference between the unit rates? Use the space below to explain your answer.

 Answer

- 
- 2 Which scenario below will result in a final value of zero?

- A. The overall change in temperature from  $9^{\circ}$  to  $-9^{\circ}$ .
- B. The balance of an account after a \$15 payment, if the starting balance was  $-\$15$ .
- C. Walking from a train platform that is -5 feet below sea level to the street.
- D. A hot air balloon that goes from sea level to 15 meters above sea level.

- 3 A school is building a new fence around their circular compost bin, shown in the diagram below.



How many feet of fencing are needed to enclose the compost bin? Use the box below to enter your answer.

Feet of fencing:

- 
- 4 Jill is a natural wildlife photographer. She takes the same amount of pictures each day for 8 days. The table below represents the total number of pictures she has after 8 days. How many pictures in total does Jill have on day 3? Use the box below to enter your answer.

Number of days	Total amount of pictures
2	76
5	190
8	304

Pictures on day 3:


- 5 Linda spent a total of \$1400 for 3 tickets to the Errors Tour at MeetLife Stadium and for parking.

The cost of the tickets were the same, including tax. She also spent \$50 to park.

**Part A:**


Write an equation that can be used to determine,  $c$ , the cost in, dollars of each ticket, including tax.

Use the space below to write your answer:

 Answer

**Part B:**

Use the equation to find the cost of 1 ticket, including the tax.

 Answer




6 Lori and Diana went for a jog every day for 7 days.

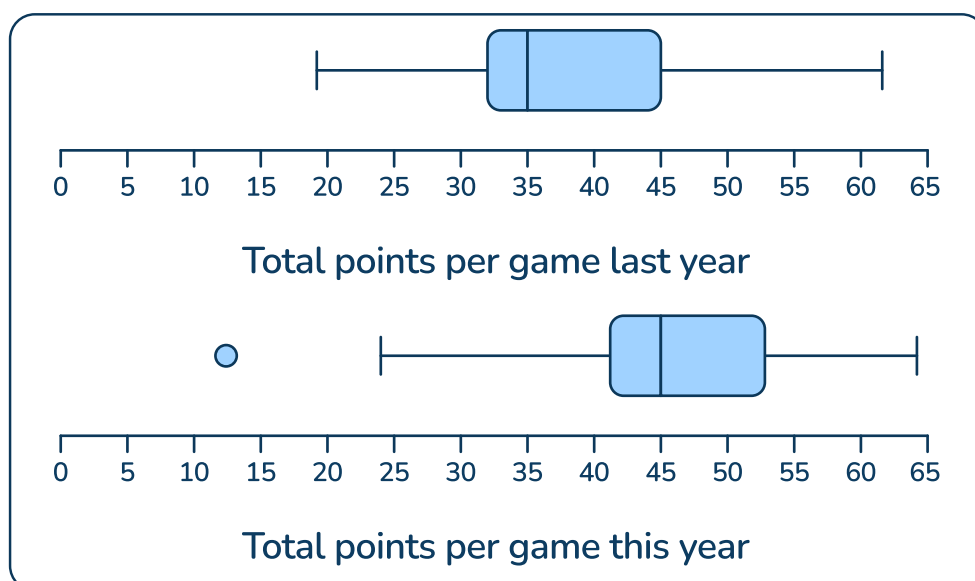
- Lori jogged  $3\frac{1}{4}$  miles each day.
- Diana jogged  $4\frac{1}{2}$  miles each day.

How much further (in miles) did Diana jog at the end of 7 days than Lori?

Use the space below to write your answer.

 Answer

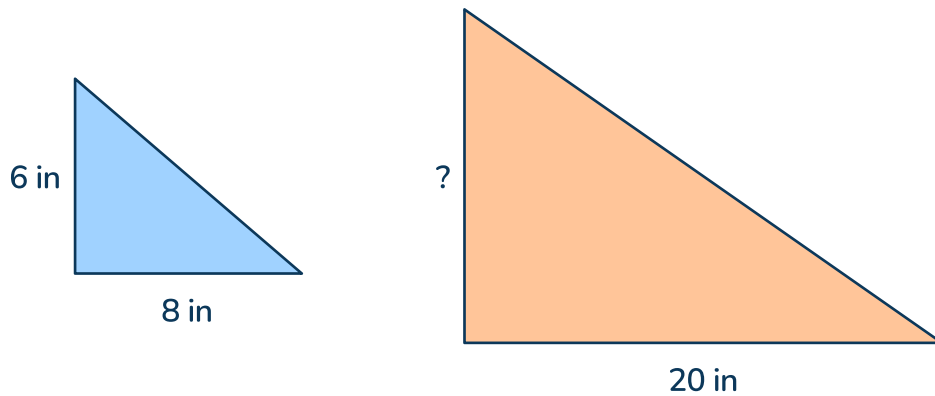
7 The two box plots show the total points per game for the school's basketball team last year and this year.



Rasheem says that, on average, the team was better this year. Which statement about the box plot supports his conclusion?

- There is an outlier of 10 from the games this year, but no outlier for last year.
- All the games from this year scored more points than last year.
- More than half of this year's games had more points than the top 25% of last year's.
- The range for this year is larger than the range for last year.

- 8 The orange triangle is a scaled version of the blue triangle. What is the missing height?



- A. 2.4 in
- B. 18 in
- C. 12.5 in
- D. 15 in

## Unit 3 - Calculator permitted

8 questions

- 1 The table below shows the proportional relationship between  $x$  and  $y$ . What is the constant of proportionality?

## Part A:

What is the constant of proportionality? Enter your answer in the space below.

$x$	$y$
3	7.5
5	12.5
6	15
9	22.5

Constant of proportionality:

## Part B:

If  $x = 12$ , what is  $y$  equal to? Enter your answer in the space below.

Value of  $y$

- 2 Solve the inequality for  $r$ .

$$\frac{1}{3}r - 5 \geq -3$$

A.  $r \geq -24$


B.  $r \geq \frac{2}{3}$

C.  $r \geq 2\frac{2}{3}$

D.  $r \geq 6$


- 
- 3 Consider the equation  $6 + x = n$

What must be true about any value of  $x$  if  $n$  is a negative number? Explain your answer. Include an example with numbers to support your explanation. Use the box below to write your explanation.

 Answer

- 4 A student tosses a fair coin with heads (H) on one side and tails (T) on the other, and rolls a fair number octahedron with eight faces that are numbered 1 through 8. How many different outcomes are possible? Show your work by showing all the different outcomes.

Use the space below to write your answer.


 Answer

- 5 A student incorrectly simplifies the expression below. In which step did the student make the first mistake? Make the correction and simplify the expression.

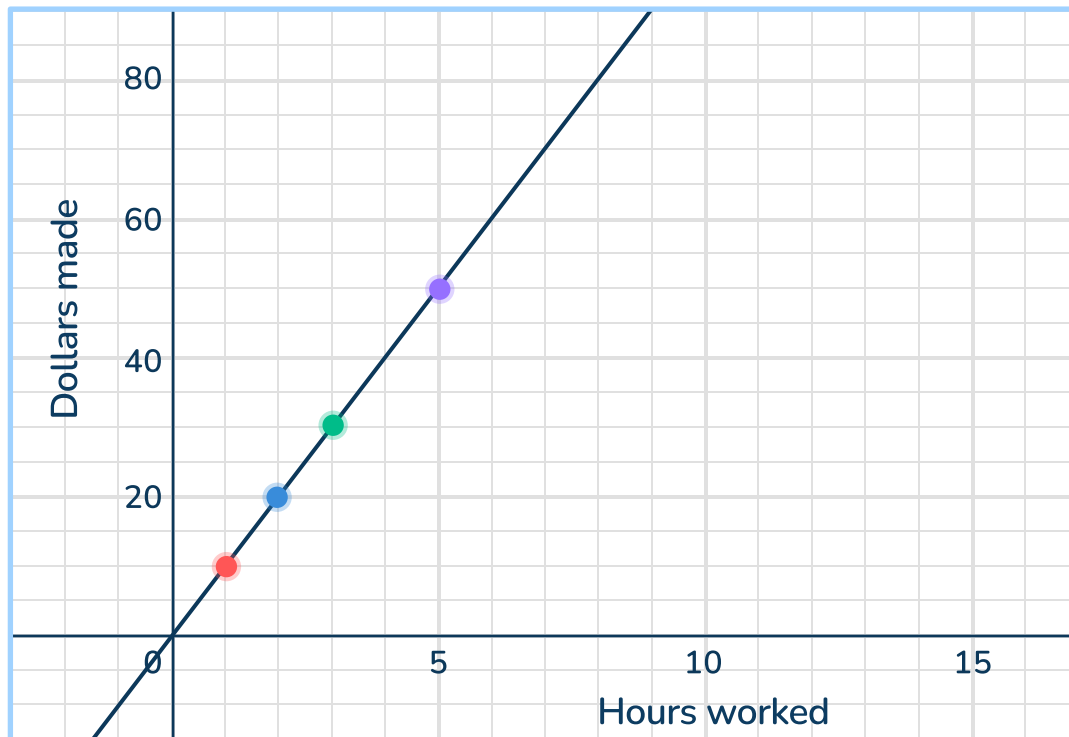
$$\frac{2}{5}(10 - 15) + 8 \div 2$$

- Step 1:  $\frac{2}{5}(5) + 8 \div 2$
- Step 2:  $2 + 8 \div 2$
- Step 3:  $2 + 4$
- Step 4: 6

Use the space below to write your answer:

 Answer

- 6 Natalie has a job for the summer season waiting tables. The graph below shows the relationship between the number of hours she works and the amount of money she makes.



Which equation can be used to find the total amount of money (in dollars) she makes for every hour she works?

- A.  $y = 5x$
- B.  $y = 50x$
- C.  $y = 10x$
- D.  $y = 20x$

- 7 The cost for 16 ounces of strawberries is \$5.25. Which equation can be used to find the cost, dollars, for 50 ounces of strawberries?

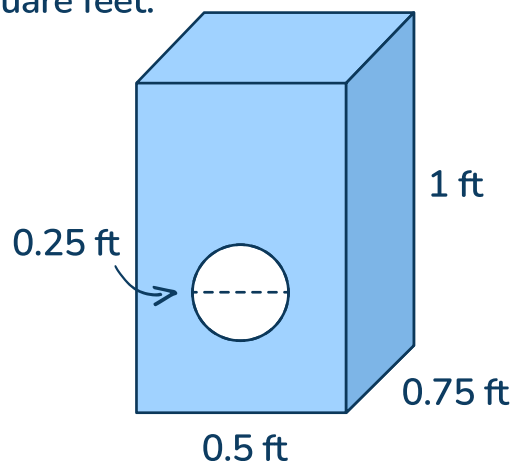
A.  $\frac{16}{\$5.25} = \frac{50}{x}$

B.  $\frac{16}{\$5.25} = \frac{x}{50}$

C.  $\frac{1}{\$5.25} = \frac{x}{50}$


D.  $\frac{1}{\$5.25} = \frac{50}{x}$

- 8 Celeste paints and sells birdhouses. The paint costs \$25.99 a gallon and each gallon paints 400 square feet.



**Part A:**

How many square feet of paint does Celeste use to paint 1 birdhouse? Explain how you solved it in the space below.

 Answer

**Part B:**

If Celeste has painted 8 bird houses, what percent of the gallon of paint has she used? Round to the nearest whole percent. Write your answer in the space below.

\_\_\_\_\_ %

## Answer Key - Unit 1

Item number	Correct answer	Standard(s)	DOK
1	C	7.EE.A.1	DOK 1
2	$x = 3.16$	7.EE.B.3	DOK 2
3	A, B, C	7.RP.2d, 7.RP.2a, 7.RP.2b	DOK 3
4	A	7.RP.3, 7.EE.4a	DOK 2
5	A	7.EE.B.4	DOK 2
6	A	7.RP.A.2b	DOK 2
7	D	7.EE.4b	DOK 2
8	$\$22.00 \div 2 = \$11.00$	7.NS.A.3	DOK 3
9	D	7.RP.A.1	DOK 2
10	B, D	7.RP.A.2b	DOK 2
11	B	7.SP.5	DOK 2
12	$x = 40$ $y = 64$	7.EE.b.4a	DOK 2
13	$\frac{5}{9}$	7.SP.7	DOK 3



# Illinois Practice Test | Grade 7 | Answers

Item number	Correct answer	Standard(s)	DOK
14	Disagree because the two expressions will not have the same answer. $4 - 6.7 = -2.7$ and $6.7 - 4 = 2.7$ . Visualizing on the number line, in the first case you start at 4 and move 6.7 units in the negative direction which lands on -2.7. In the second case, you start at 6.7 and move 4 units in the negative direction which lands on 2.7.	<b>7.NS.A.1</b>	DOK 3
15	<p><b>Part A:</b>  <math>2x + \frac{1}{2}x = 180</math>  <math>2\frac{1}{2}x = 180</math>  <math>\frac{5}{2}x = 180</math>  <math>x = 72^\circ</math></p> <p><b>Part B:</b>  Angle PED = <math>\frac{1}{2} \times 72 = 36^\circ</math></p> <p><b>Part C:</b>  Angle YED = <math>144^\circ</math></p>	<b>7.NS.A.3, 7.G.B.5, 7.EE.B.4</b>	DOK 3

## Answer Key - Unit 2

Item number	Correct answer	Standard(s)	DOK
1	\$2.50 unit rate for 6-pack \$2.12 unit rate for 8 pack $2.50 - 2.12 = 0.38$ \$0.38 difference in unit rates	<b>7.RP.2b</b>	DOK 3
2	B	<b>7.NS.1a</b>	DOK 2
3	Circumference = $d \times \pi$ $= 10.5 \times 3.14159...$ $= 32.99$ ft of fencing	<b>7.G.B.4</b>	DOK 2
4	114 pictures	<b>7.RP.A.2a</b>	DOK 3
5	<b>Part A:</b> $c = (1400 - 50) \div 3$  <b>Part B:</b> $c = (1350 \div 3)$ $c = 450$ \$450 per ticket	<b>7.EE.B.3</b>	DOK 3
6	Lori = $7 \times 3\frac{1}{4} = 22\frac{3}{4}$ miles Diana = $7 \times 4\frac{1}{2} = 31\frac{1}{2}$ miles $31\frac{1}{2} - 22\frac{3}{4} = 8\frac{3}{4}$ $8\frac{3}{4}$ miles more	<b>7.NS.A.2</b>	DOK 3
7	C	<b>7.SP.3</b>	DOK 2
8	D	<b>7.G.A.1</b>	DOK 2

## Answer Key - Unit 3

Item number	Correct answer	Standard(s)	DOK
1	<b>Part A:</b> Constant of proportionality = 2.5  <b>Part B:</b> $y = 30$	7.RP.A.2b	DOK 3
2	D	7.EE.B.4	DOK 2
3	$6 + x < 0$ so $x < -6$	7.NS.A.1	DOK 3
4	Total of 16 outcomes.  H1    T1 H2    T2 H3    T3 H4    T4 H5    T5 H6    T6 H7    T7 H8    T8	7.SP.8	DOK 3
5	The mistake was made in Step 1. Step 1 should be: $\frac{2}{5}(-5) + 8 \div 2$ because $10 - 15 = -5$ not 5. $\frac{2}{5}(-5) + 8 \div 2$ $-2 + 4 = 2$	6.G.A.1 6.G.7.NS.A.3A .3	DOK 3
6	C	7.RP.A.2b	DOK 2
7	A	7.RP.A.2c	DOK 2

# Illinois Practice Test | Grade 7 | Answers

Item number	Correct answer	Standard(s)	DOK
8	<p><b>Part A:</b></p> <ul style="list-style-type: none"> <li>• Top / bottom: <math>0.5 \times 0.75 = 0.375</math></li> <li>• Left / right side: <math>0.75 \times 1 = 0.75</math></li> <li>• Back side: <math>0.5 \times 1 = 0.5</math></li> <li>• Front side: <math>0.5 - (0.125^2 \times \pi) = 0.4509</math></li> <li>• Total surface area: <math>0.375 + 0.375 + 0.75 + 0.75 + 0.5 + 0.4509 = 3.2009 \text{ ft}^2</math></li> </ul> <p><b>Part B:</b></p> <p><math>3.2009 \text{ ft}^2 \times 8 = 25.6072</math>  <math>25.6072 \div 400 = 0.064018 = 6.4\%</math></p>	<b>7.NS.3, 7.G.4, 7.G.6, 7.RP.3</b>	DOK 3




Breakdown of Assessment by domain				
Operations and Algebraic thinking (OA)	Number and Operations in Base Ten (NBT)	Number and Operations - Fractions (NF)	Measurement and Data (MD)	Geometry (G)
21%	31%	24%	13%	11%

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