New York State Testing Program

2018

Mathematics Test

Grade 4

Scoring Leader Materials

Training Set

2-Point Holistic Rubric

2 Point	A two-point response includes the correct solution to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task. This response • indicates that the student has completed the task correctly, using mathematically sound procedures • contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures • may contain inconsequential errors that do not detract from the correct solution and the demonstration of a thorough understanding
1 Point	A one-point response demonstrates only a partial understanding of the mathematical concepts and/or procedures in the task. This response • correctly addresses only some elements of the task • may contain an incorrect solution but applies a mathematically appropriate process • may contain the correct solution but required work is incomplete
0 Point*	A zero-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

* Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

3-Point Holistic Rubric

3 Point	A three-point response includes the correct solution(s) to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task. This response • indicates that the student has completed the task correctly, using mathematically sound procedures • contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures • may contain inconsequential errors that do not detract from the correct solution(s) and the demonstration of a thorough understanding
2 Point	A two-point response demonstrates a partial understanding of the mathematical concepts and/or procedures in the task. This response • appropriately addresses most but not all aspects of the task using mathematically sound procedures • may contain an incorrect solution but provides sound procedures, reasoning, and/or explanations • may reflect some minor misunderstanding of the underlying mathematical concepts and/or procedures
1 Point	A one-point response demonstrates only a limited understanding of the mathematical concepts and/or procedures in the task. This response • may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete • exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning • reflects a lack of essential understanding of the underlying mathematical concepts • may contain the correct solution(s) but required work is limited
0 Point*	A zero-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

* Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted)

2018 2- and 3-Point Mathematics Scoring Policies

Below are the policies to be followed while scoring the mathematics tests for all grades:

1. If a student shows the work in other than a designated "Show your work" or "Explain" area, that work should still be scored.

2. If the question requires students to show their work, and the student shows appropriate work and clearly identifies a correct answer but fails to write that answer in the answer space, the student should still receive full credit.

3. If students are directed to show work, a correct answer with **no** work shown receives **no** credit.

4. If students are **not** directed to show work, any work shown will **not** be scored. This applies to items that do **not** ask for any work and items that ask for work for one part and do **not** ask for work in another part.

5. If the student provides one legible response (and one response only), the rater should score the response, even if it has been crossed out.

6. If the student has written more than one response but has crossed some out, the rater should score only the response that has **not** been crossed out.

7. If the student provides more than one response, but does not indicate which response is to be considered the correct response and none has been crossed out, the student shall not receive full credit.

8. If the student makes a conceptual error (that is an error in understanding rather than an arithmetic or computational error), that student shall not receive more than 50% credit.

9. Trial-and-error responses are **not** subject to Scoring Policy #6 above, since crossing out is part of the trial-and-error process.

10. If a response shows repeated occurrences of the same conceptual error within a question, the conceptual error should **not** be considered more than once in gauging the demonstrated level of understanding.

11. In questions requiring number sentences, the number sentences must be written horizontally.

12. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.

13. Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted). This is not to be confused with a score of zero wherein the student does respond to part or all of the question but that work results in a score of zero.

39

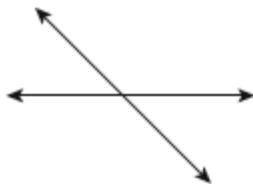Which diagram below appears to show a pair of perpendicular lines?
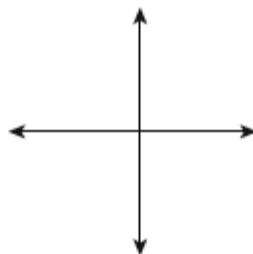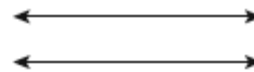

Diagram A   Diagram B   Diagram C

Explain your answer.

_____

_____

_____

39

Which diagram below appears to show a pair of perpendicular lines?
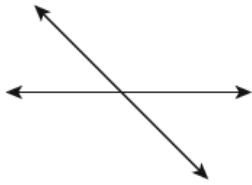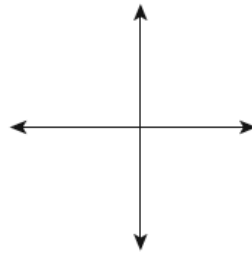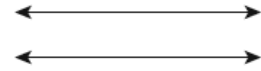
Diagram A   Diagram B   Diagram C

Explain your answer.

Diagram B, because the two lines appear to cross at a 90 degree angle.

Diagram C has two parallel lines.
In diagram A, the lines create acute and obtuse angles.

Or any other valid explanation

39 Which diagram below appears to show a pair of perpendicular lines?
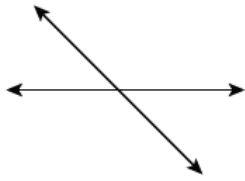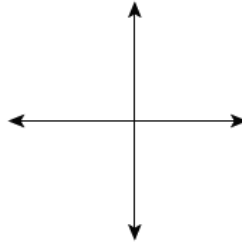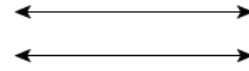
Diagram A   Diagram B   Diagram C

Explain your answer.

diagram B shows perpendicular lines. I know this because digram B forms right angles.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The answer and explanation are correct and complete.

39

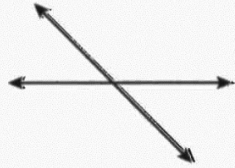Which diagram below appears to show a pair of <u>perpendicular</u> lines?
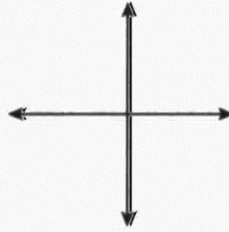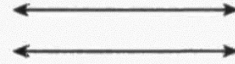
Diagram A

Diagram B

Diagram C

Explain your answer.

Diagram B shows ✗ perpendicular lines. I know this because diagram B lines meet making 90° angle.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The answer and explanation are correct and complete.

39

Which diagram below appears to show a pair of perpendicular lines?
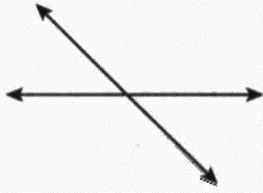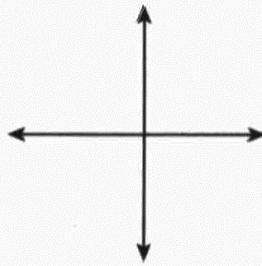
Diagram A   Diagram B   Diagram C
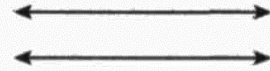
Explain your answer.

Diagram B because perpendicular line
have 4 right angles and one line go
up and the other one go across.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The answer and explanation are correct and complete.

39

Which diagram below appears to show a pair of perpendicular lines?
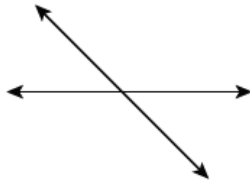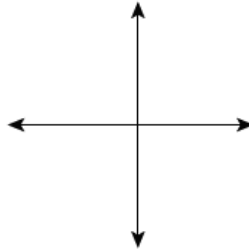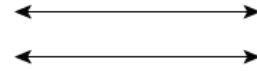
Diagram A Diagram B Diagram C

Explain your answer.

Diagram A shows intersecting lines. Diagram B shows perpendicular lines. Diagram C shows paralelle lines. So the correct answer is diagram B, perpendicular lines.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The correct choice is made but the explanation is incomplete and does not reference right angles. The response addresses only some elements of the task correctly.

39

Which diagram below appears to show a pair of perpendicular lines?
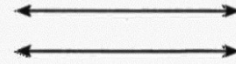
Diagram A   Diagram B   Diagram C

Explain your answer.

Diagram B because the lines are straight.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The correct choice is made but the explanation does not reference right angles. The response addresses only some elements of the task correctly.

GUIDE PAPER 6

39 Which diagram below appears to show a pair of perpendicular lines?
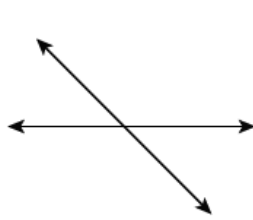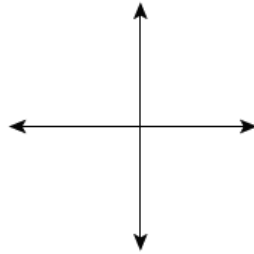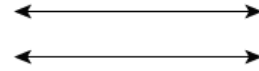
Diagram A   Diagram B   Diagram C

Explain your answer.

diagram b beacuse it has a square shape

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The correct choice is made but the explanation "*beacuse it has a square shape*" is not specific enough to refer to right angles. The response addresses only some elements of the task correctly.

39

Which diagram below appears to show a pair of perpendicular lines?

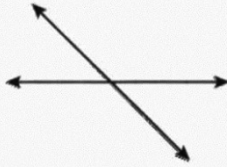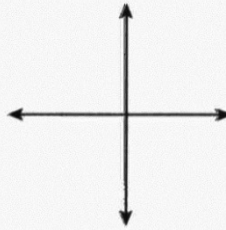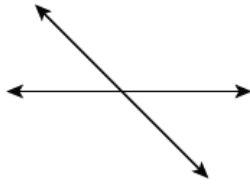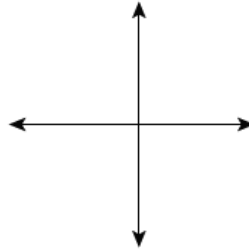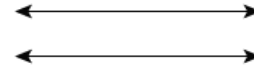Diagram A   Diagram B   Diagram C

Explain your answer.

> Diagram C is perpendicuicular because lines that are perpendicuicular never touch.

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The response shows confusion between perpendicular and parallel, leading to an incorrect answer.

39

Which diagram below appears to show a pair of perpendicular lines?

Diagram A   Diagram B   Diagram C

Parallele (Diagram C)
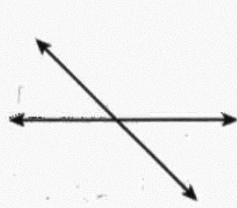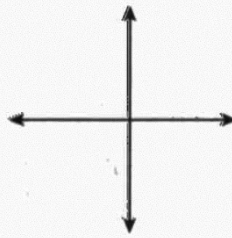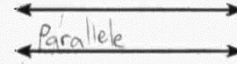
Explain your answer.

I think it is diagram A. Becaus perpendicular
is two intersecting lines that are diagnal. &
they make an acute & obtuce.

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. An incorrect choice is supported with an incorrect explanation.

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

Answer _____ vases

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

1323 ÷ 8 = 165 R3

The total number of vases that can be filled completely with 8 flowers each is 165.

Or any other valid process

Answer _____165_____ vases

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.
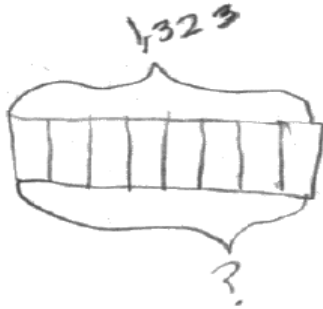
1,323

the total number of roses the workers can fill completely is 165 vases.

Answer 165 vases

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of vases is correctly determined through sound mathematical processes.

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

$$
\begin{array}{r}
165 \ R3 \\
8\overline{)1,1323} \\
800 \\
\hline
4523 \\
480 \\
\hline
43 \\
40 \\
\hline
3
\end{array}
$$

Answer ___165___ vases

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of vases is correctly determined through sound mathematical processes.

GUIDE PAPER 3

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill <u>completely</u>?

Show your work.

CHECK

165
x   8
1320
+3 remainder
1323

165 (R3)
8 | 1323
  -8↓
  4 5 8 12
  4 8 ↓
  0 0 3
  -4 0
     3

Answer ___165___ vases

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of vases is correctly determined through sound mathematical processes.

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

$$
\begin{array}{r}
X165r3 \\
8)\overline{1,323} \\
-\ \underline{8}\downarrow \\
5\ \underline{2} \\
-48\downarrow \\
\overline{43} \\
-\underline{40} \\
\overline{3}
\end{array}
$$

Answer ___166___ vases

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The division is performed correctly and the remainder is clearly identified, but an incorrect answer is provided: the last vase will be incompletely filled with only three flowers. The response addresses only some elements of the task correctly.

GUIDE PAPER 5

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

$$
\begin{array}{r}
152 \text{ r.7} \\
8\overline{)1323} \\
-8 \\
\hline
52 \\
-40 \\
\hline
13 \\
-16 \\
\hline
17
\end{array}
$$

$$
\begin{array}{r}
152 \\
+7 \\
\hline
159
\end{array}
$$

Answer ___159___ vases

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. A sound mathematical process is used to determine the number of vases but a calculation error results in an incorrect answer. The response addresses only some elements of the task correctly.

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

$$8\overline{)1323}$$
$$-1200$$
$$\overline{0123}$$
$$-120$$
$$\overline{003}$$

$$\begin{array}{r} 20 \\ \times 8 \\ \hline 160 \end{array}$$

$$\begin{array}{r} 15 \\ \times 8 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 156 \\ \times 8 \\ \hline 1248 \end{array}$$

$$\begin{array}{r} 165 \\ \times 8 \\ \hline 12,80 \end{array}$$

$$\begin{array}{r} 167 \\ \times 8 \\ \hline 1326 \end{array}$$

$$\begin{array}{r} 170 \\ \times 8 \\ \hline 1360 \end{array}$$

$$\begin{array}{r} 165 \\ \times 8 \\ \hline 1320 \ R3 \end{array}$$

Answer 165 R3 **vases**

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. Trial-and-error is used to determine the number of completely filled vases but errors in the work show an incomplete understanding of the process and the answer is not truncated to remove the remainder.

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Please
Show your work.

$$
\begin{array}{r}
1 \quad 13 \\
1,323 \\
- \quad 8 \\
\hline
1,315
\end{array}
$$

Answer ___1,315___ vases

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The use of subtraction instead of division shows no understanding of the task.

40

The workers at Cameron's Flower Shop are putting 1,323 flowers into vases for a party. Each vase must hold exactly 8 flowers. What is the total number of vases the workers can fill completely?

Show your work.

$$\begin{array}{r} \overset{2}{1},\overset{1}{3}\overset{2}{2}3 \\ \times \qquad 8 \\ \hline 10,584 \end{array}$$

Answer ___10,584___ vases

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The use of multiplication instead of division shows no understanding of the task.

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression _____

Show your work.

Answer _____ miles walked

EXEMPLARY RESPONSE

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write

an expression that can be used to find the total number of miles that Samantha

walks to and from school over 5 days. Then evaluate the expression.

Expression ⅔ × 5

Show your work.

Miles walked over 5 days:
⅔ × 5

Total number of miles walked over
5 days is:
⅔ × 5 = ¹⁰⁄₃ miles or 3⅓ miles

Or any other valid process

Answer ¹⁰⁄₃ or 3⅓ miles walked

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression $\frac{2}{3} \times 5$

Show your work.

① $\frac{2}{3} \times 5 =$

② $\frac{2}{3} \times \frac{5}{1}$ ← Add the one

③ $\frac{2}{3} \times \frac{5}{1} = \frac{10}{3}$ multiply

Answer $\frac{10}{3}$ miles walked

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. A correct expression is written and the number of miles walked is correctly determined using mathematically sound procedures.

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression $\frac{2}{3}+\frac{2}{3}+\frac{2}{3}+\frac{2}{3}+\frac{2}{3}$

Show your work.

$$\frac{2}{3}+\frac{2}{3}=1\frac{1}{3} \qquad \frac{2}{3}+\frac{2}{3}+\frac{2}{3}=2$$

$$\begin{array}{r} 1\frac{1}{3} \\ +\ 2 \\ \hline 3\frac{1}{3} \end{array}$$

Answer $3\frac{1}{3}$ miles walked

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. A correct expression is written and the number of miles walked is correctly determined using mathematically sound procedures.

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression $5 \times \frac{2}{3}$

Show your work.

$\frac{10}{3}$

Answer _____ miles walked

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. A correct expression is written and the number of miles walked is correctly determined using mathematically sound procedures.

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression _Using multiplication_

Show your work.

$$\frac{5}{1} \times \frac{2}{3} = \frac{10}{3} = 3\frac{1}{3}$$

$3\frac{1}{3}$

Answer $3\frac{1}{3}$ miles walked

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The number of miles walked is correctly determined using mathematically sound procedures, but no expression is written. The response addresses only some elements of the task correctly.
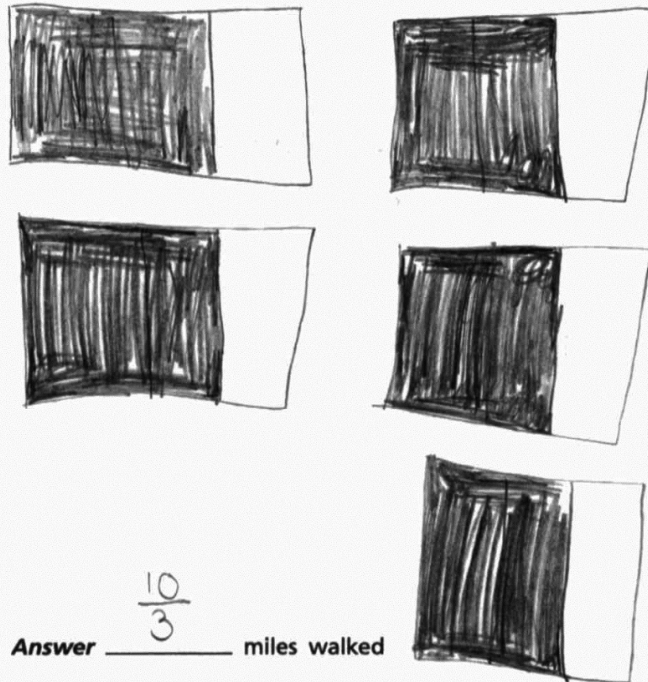
41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression $\frac{2}{3} \times \frac{5}{1} = ?$

Show your work.

$$\frac{2}{3} + \frac{2}{3} = \frac{4}{3} = 1\frac{1}{3}$$

$$\frac{4}{3} \times \frac{5}{1} = \frac{20}{3} = 6\frac{2}{3}$$

Samantha walks 6²/3 miles to and from school in 5 days

Answer $6\frac{2}{3}$ miles walked

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The response uses a correct process but incorrectly doubles the distance walked and multiplies ⁴⁄₃ × ⁵⁄₁. Additionally, the expression is incorrect. The response addresses only some elements of the task correctly.

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression $5 \times \frac{2}{3}$

Show your work.

$\frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$

$5 \times \frac{2}{3} = \frac{10}{15}$

$\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} = \frac{10}{15}$

Answer $\frac{10}{15}$ miles walked

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. A correct expression is written, but it is evaluated incorrectly. The response addresses only some elements of the task correctly.

41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression $\frac{2}{3} + \frac{5}{1} =$

Show your work.

$$\frac{2}{3} + \frac{5}{1} = \frac{7}{4}$$

$$4\overline{)7}$$
$$-4$$
$$3$$

$$1+1=2$$

Answer _____2_____ miles walked

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The expression is incorrect and the work is incorrect and irrelevant.
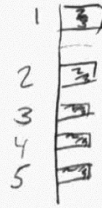
41

Samantha walks a total of $\frac{2}{3}$ mile to get to and from school each day. Write an expression that can be used to find the total number of miles that Samantha walks to and from school over 5 days. Then evaluate the expression.

Expression _____ $\frac{7}{3}$ _____

Show your work.

$5 + \frac{2}{3} = \frac{7}{3}$

Answer _____ $\frac{7}{3}$ _____ miles walked

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The expression is incorrect and the work is incorrect and irrelevant.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

Answer   *m* = _____ pounds of paper

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$54 = 9 \times m$$
$$m = 54 \div 9$$
$$m = 6$$

Or any other valid process

Answer $m =$ _____6_____ pounds of paper

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$m \times 9 = 54 \text{ pounds}$$

$$m = 6$$

$$6 \times 9 = 54 \text{ pd}$$

$$54 \div 9 = 6$$

Answer *m* = ___6___ pounds of paper

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The amount of paper recycled by Monica is correctly determined using a correct equation.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.
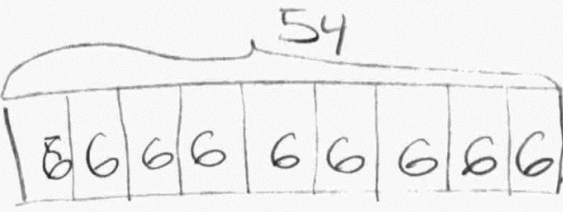
Show your work.

$$54 \div 9 = m$$

$$54 \div 9 = 6 \text{ lbs}$$

Answer **m** = ___6___ pounds of paper

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The amount of paper recycled by Monica is correctly determined using a correct equation.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find m, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$54 \div 9 = m$$

Answer $m =$ _____6_____ pounds of paper

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The amount of paper recycled by Monica is correctly determined using a correct equation.

42

Took 6
away

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

m = 6 pounds of paper

9) 54

Answer   *m* = _____6_____ pounds of paper

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The amount of paper recycled by Monica is correctly determined, but no equation is written. Per Scoring Policy #11, number sentences must be written horizontally. The response addresses only some elements of the task correctly.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$\begin{array}{r} 5\,4 \\ -9 \\ \hline 4\,5 \end{array}$$

equation ___54-9=m___

Answer   *m* = ___45___ pounds of paper

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. An incorrect equation is provided, but the equation is solved correctly. The response addresses only some elements of the task correctly.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$\frac{54 \div 9}{6}$$

Answer   *m* = _____6_____ pounds of paper

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. No equation is written, but the correct answer is calculated with a correct process. The response addresses only some elements of the task correctly.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$54 \times 9 = M$$

$$\begin{array}{r} ③ \\ 54 \\ \times \quad 9 \\ \hline 576 \end{array}$$

Answer **m** = ___576___ pounds of paper

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. An incorrect equation is solved incorrectly.

42

Cindy recycled 54 pounds of paper. She recycled 9 times as many pounds of paper as Monica. Write an equation that can be used to find *m*, the number of pounds of paper Monica recycled. Then solve the equation to find the number of pounds of paper Monica recycled.

Show your work.

$$
\begin{array}{r}
\overset{3}{5}4 \\
\times 9 \\
\hline
486
\end{array}
$$

Answer   *m* = __480__ pounds of paper

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. No equation is written and the answer is calculated using an incorrect procedure.

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

Answer _____

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

> Total fraction of cats and dogs at the pet show:
> $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$
>
> Fraction of rabbits at the pet show:
> $\frac{8}{8} - \frac{7}{8} = \frac{1}{8}$
>
> $\frac{1}{8}$ of the animals at the pet show are rabbits.
>
> Or any other valid process

Answer _____$\frac{1}{8}$_____

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

$$\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$$

$$\frac{8}{8} - \frac{7}{8} = \frac{1}{8}$$

Answer ___ $\frac{1}{8}$ ___

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The correct fraction of rabbits at the pet show is determined using mathematically sound processes.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

$\frac{3}{4} + \frac{4}{8} = \frac{7}{8}$ so

$\frac{1}{8}$ of the animals were rabbits.

Answer_____ $\frac{1}{8}$ _____

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The correct fraction of rabbits at the pet show is determined using mathematically sound processes.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

Answer ___$\frac{1}{8}$___
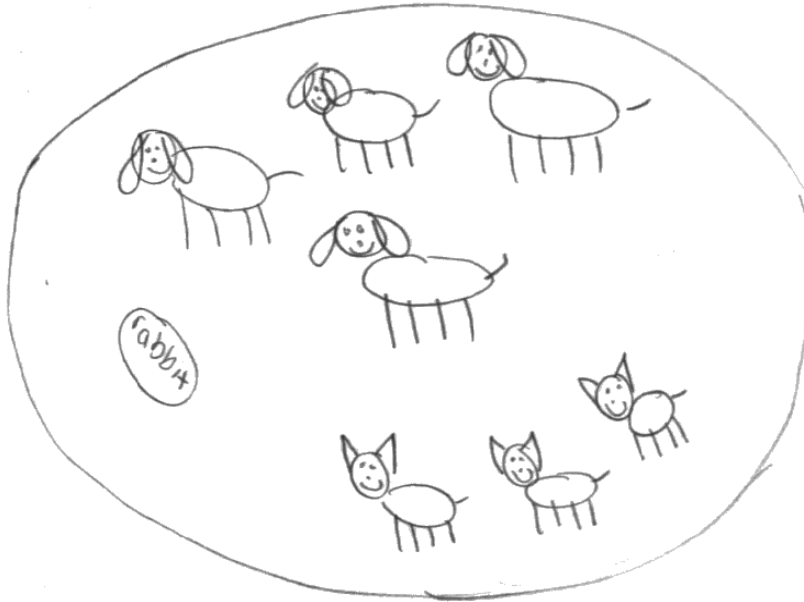

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The correct fraction of rabbits at the pet show is determined using pictograms.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

$$\frac{4}{8} + \frac{3}{8} = \frac{7}{8}$$

Answer ___ $\frac{7}{8}$ ___

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The fraction of cats and dogs is calculated correctly but the rest of the task is not addressed. The response addresses only some elements of the task correctly.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

Answer _____ 1 rabbit

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The fraction of rabbits is correctly represented using pictograms; however, an incorrect answer is provided. The response addresses only some elements of the task correctly.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the

animals were rabbits. What fraction of the animals at the pet show

were rabbits?

Show your work.

$$4 + 3 = \frac{7}{8} \quad 7 \text{ out of } 8$$

7 dogs and cats
So now the last one is
the rabbit

Answer ___1 Rabbit___

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The fraction of cats and dogs is correctly calculated; however, an incorrect process is applied to determine the fraction of rabbits. The response addresses only some elements of the task correctly.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

$$\frac{4}{8} - \frac{3}{8} = \frac{1}{8}$$

Check ✓

$$\frac{1}{8} + \frac{3}{8} = \frac{4}{8}$$

Answer _____ $\frac{1}{8}$ _____

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. A correct answer is determined using an incorrect procedure.

43

Of the animals at a pet show, $\frac{3}{8}$ were cats and $\frac{4}{8}$ were dogs. The rest of the animals were rabbits. What fraction of the animals at the pet show were rabbits?

Show your work.

$$\frac{3}{8} + \frac{4}{8} = \frac{7}{16}$$
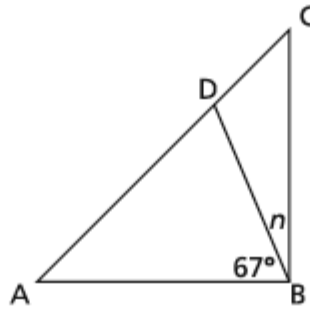
<u>There were $\frac{7}{16}$ rabbits.</u>

Answer $\frac{7}{16}$

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The answer and work are incorrect.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

Answer *n* = _____ degrees

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let n represent the measure of angle DBC. Then determine the measure of n.
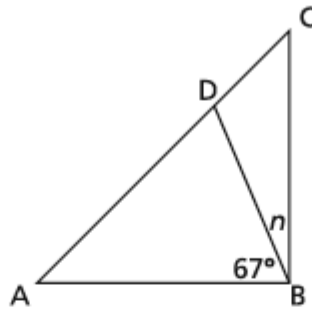
Show your work.

$$n + 67 = 90$$
$$n = 90 - 67$$
$$n = 23 \text{ degrees}$$

Or any other valid process

23

Answer $n = $ _____ degrees

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.
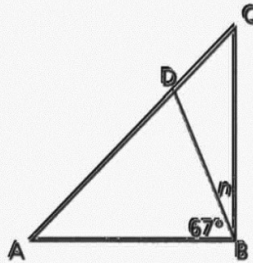
Show your work.

$$90° - 67° = n° = 23°$$

$$
\begin{array}{r}
8\;^{18}\\
9\!\!\!/0°\\
67°\\
\hline
23
\end{array}
$$

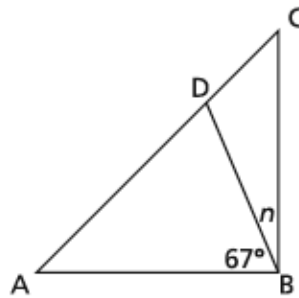**Answer**   *n* = $\underline{\quad 23° \quad}$ degrees

---

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The response contains a correct equation to determine *n*, which is solved correctly using a sound mathematical process.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

$90 - 67 = n$

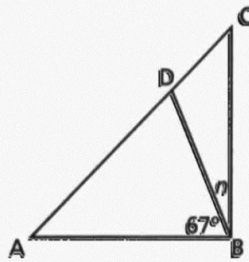**Answer** *n* = [23] degrees

---

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The response contains a correct equation to determine *n*, which is solved correctly.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

$$\begin{array}{r} 67 \\ +3 \\ \hline 70 \\ +20 \end{array}$$

$$n + 67 = 90$$

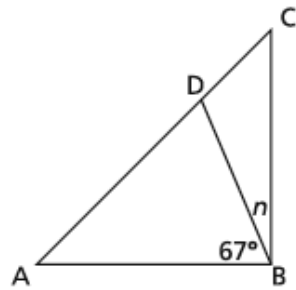Answer   *n* = __23__ degrees

---

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The response contains a correct equation to determine *n*, which is solved correctly.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

$90 - 67 = 23$

Answer *n =* ☐ 23 degrees

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. No equation for *n* is written, but the correct answer is calculated using a sound process. The response addresses only some elements of the task correctly.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

n is 25 degrees
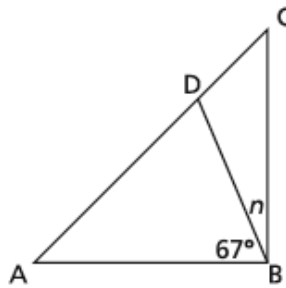
67 + n = 92

Answer n = [25] degrees

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. The equation for *n* is written using 92° for a right angle instead of 90°, but it is solved correctly. The response addresses only some elements of the task correctly.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

$$ABC = 90°$$
$$ADB = 67°$$

$$90 - 67 = 23$$

$$3 + 20 = 23$$

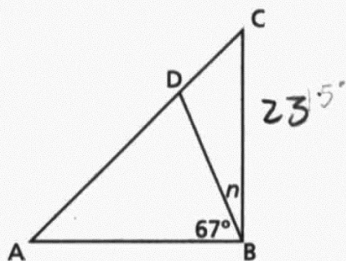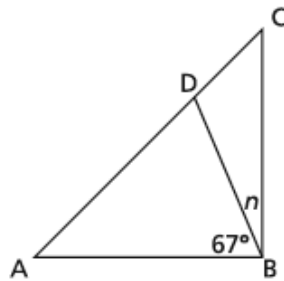**Answer** *n* = ___23___ degrees

---

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts in the task. No equation for *n* is written, but the correct answer is determined using a sound process. The response addresses only some elements of the task correctly.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

Show your work.

> because if the hole thing is worth 90 degrees and one part is 67 the other part has to be 33

Answer n = [33] degrees

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The response does not contain an equation involving *n*. Even though it recognizes a right angle is 90 degrees, holistically the answer is incorrect and the explanation does not describe how the 90 degrees is used to calculate the answer.

44

Right triangle ABC is shown below.

Write an equation that can be used to determine the angle measure, in degrees, of angle DBC. Let *n* represent the measure of angle DBC. Then determine the measure of *n*.

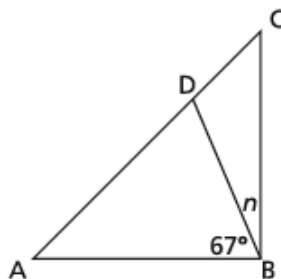*Show your work.*

$60 + 80 = 140 - 67 = 73$

Answer   *n* = 73   degrees

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The answer is incorrect and the work is irrelevant to the task.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

Answer _____ erasers

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

Orange erasers = 8 × 24 = 192 erasers

Blue erasers = 6 × 28 = 168 erasers

Total number of erasers =
192 + 168 = 360 erasers

Or any other valid process

Answer ___360___ erasers

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

(8*24)=32 + 160 = 192
192 + 168
(6*28) = 48 + 120 = 168

360

Answer   erasers

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. Sound mathematical processes are used to correctly determine the total number of erasers.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

$$24 \times 8 = 192$$

$$28 \times 6 = 168$$

$$192 + 168 = 360$$

Answer 360 **erasers**

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. Sound mathematical processes are used to correctly determine the total number of erasers.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

8x24=192 28x6=168+192=360

360

Answer ____ erasers

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. Sound mathematical processes are used to correctly determine the total number of erasers.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

24   24   24   24   24   78

24   24   24

7 24 ✓
24 ✓
24 ✓
24 ✓
24 ✓
24 ✓
24 ✓
28 ✓
28 ✓
28 ✓
28 ✓
28 ✓
28 ✓
___
33 6

28   28   28   28

28   28

Answer ___336___ erasers

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The valid process of repeated addition is used; however, one pack of orange erasers is missing from the addition despite being represented graphically, leading to an incorrect answer. The response addresses most, but not all aspects of the task correctly.

25

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45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

orange erasers=192=24*8
blue erasers=48=28*6
total=240=192+48

Answer 240 erasers

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. A correct process is used to determine the total number of erasers, but a calculation error in determining the number of blue erasers leads to an incorrect answer. The response addresses most, but not all aspects of the task correctly.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

orange 8x24=192   blue 6x28=168

Answer [360] erasers

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The total number of both colors of eraser is calculated correctly, but the process to determine the total number of all erasers is not shown in the work. The response addresses most, but not all aspects of the task correctly.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

8x28=198   6x24=144   198+144=342

342

Answer   erasers

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. The values 6 and 8 are transposed and the work contains a calculation error ($8 \times 28 \neq 198$). The products are then added correctly. The response addresses some elements of the task correctly.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

$$\begin{array}{r} 324 \\ \times 2 \\ \hline 1192 \\ +24 \\ \hline 216 \end{array}$$

$$\begin{array}{r} 428 \\ \times 6 \\ \hline 168 \\ +28 \\ \hline 196 \end{array}$$

$$\begin{array}{r} 216 \\ +196 \\ \hline 412 \end{array}$$

Answer ___412___ erasers

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. The total number of both colors of erasers is correctly multiplied, but a conceptual error is made when an extra pack is added to each total. The incorrect totals are then added correctly. The response addresses some elements of the task correctly. Per Scoring Policy #8, this response cannot receive more than 50% credit.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

192+168=360

Answer 360 erasers

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. The correct total number of erasers is determined through addition, but the process to determine the total number of each color of eraser is not shown in the work. The response contains the correct solution but the required work is limited.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

The total amount of erasers is 360 erasers the teacher bought for the class.

Answer 360 erasers

Score Point 0 (out of 3 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Per Scoring Policy #3, a correct answer with no work shown cannot receive credit.

45

A teacher buys 8 packs of orange erasers and 6 packs of blue erasers for his classroom. There are 24 orange erasers in a pack and 28 blue erasers in a pack. What is the total number of erasers the teacher buys for his classroom?

Show your work.

$$\begin{array}{r} \overset{1}{2}4 \\ +28 \\ \hline 52 \end{array}$$

$$\begin{array}{r} +14 \\ \hline 66 \end{array}$$

Answer ___66___ erasers

Score Point 0 (out of 3 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The work shown is not relevant to the task.