Please PRINT all information in the box.

Student Name: ____________________________________________

Teacher Name: ____________________________________________

School: ___________________________________________________

District: ___________________________________________________
<table>
<thead>
<tr>
<th>Conversion</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 inch = 2.54 centimeters</td>
<td>Exponential Growth: $y = a(1 + r)^t$</td>
</tr>
<tr>
<td>1 mile = 5280 feet</td>
<td>Exponential Decay: $y = a(1 - r)^t$</td>
</tr>
<tr>
<td>1 mile = 1760 yards</td>
<td>Compound Interest: $A = P\left(1 + \frac{r}{n}\right)^{nt}$</td>
</tr>
<tr>
<td>1 mile = 1.609 kilometers</td>
<td>Continually Compounding Interest: $A = Pe^{rt}$</td>
</tr>
<tr>
<td>1 kilometer = 0.62 mile</td>
<td>Arithmetic Sequence: $a_n = a_1 + (n - 1)d$</td>
</tr>
<tr>
<td>1 meter = 39.37 inches</td>
<td>Geometric Sequence: $a_n = a_1(r)^{n-1}$</td>
</tr>
<tr>
<td>1 pound = 16 ounces</td>
<td>Finite Geometric Series: $S_n = \frac{a_1(1 - r^n)}{1 - r}$</td>
</tr>
<tr>
<td>1 pound = 0.454 kilograms</td>
<td>Degrees: 1 degree = $\frac{\pi}{180}$ radians</td>
</tr>
<tr>
<td>1 kilogram = 2.2 pounds</td>
<td>Radians: 1 radian = $\frac{180}{\pi}$ degrees</td>
</tr>
<tr>
<td>1 ton = 2000 pounds</td>
<td></td>
</tr>
<tr>
<td>1 cup = 8 fluid ounces</td>
<td></td>
</tr>
<tr>
<td>1 pint = 2 cups</td>
<td></td>
</tr>
<tr>
<td>1 quart = 2 pints</td>
<td></td>
</tr>
<tr>
<td>1 gallon = 4 quarts</td>
<td></td>
</tr>
<tr>
<td>1 gallon = 3.785 liters</td>
<td></td>
</tr>
<tr>
<td>1 liter = 0.264 gallons</td>
<td></td>
</tr>
<tr>
<td>1 liter = 1000 cubic centimeters</td>
<td></td>
</tr>
</tbody>
</table>
No test material on this page
No test material on this page
Directions

This test has Subpart 1, Subpart 2, and Subpart 3. Each subpart contains various types of assessment questions. The following samples show the types of questions used.

You MAY NOT use a calculator in Subpart 1 of this test.

Sample: Graphing response

Rectangle $GHJK$ is shown.
continued

The rectangle is reflected across the $x$-axis.

Graph the image $G'H'J'K'$ on the coordinate plane.
No test material on this page
No test material on this page
Select all tables that could represent a function.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>A.</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td>-4</td>
<td>8</td>
</tr>
<tr>
<td>-1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>-3</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
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<p>| | |</p>
<table>
<thead>
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<tr>
<td>B.</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
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<tr>
<td>6</td>
<td>5</td>
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</tbody>
</table>

<p>| | |</p>
<table>
<thead>
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<th></th>
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<tbody>
<tr>
<td>C.</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>3</td>
<td>-4</td>
</tr>
<tr>
<td>3</td>
<td>-6</td>
</tr>
<tr>
<td>7</td>
<td>-9</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
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<th></th>
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<tbody>
<tr>
<td>D.</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>E.</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td>-3</td>
<td>0</td>
</tr>
<tr>
<td>-2</td>
<td>0</td>
</tr>
<tr>
<td>-1</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
2. Grace and her brother need $400 to go to band camp. Their parents have agreed to help them earn money by paying them $25 each time they mow the lawn and $10 for each hour they babysit their younger brother. They will have to do a combination of both chores to earn the money.

Select the equation that represents the number of lawns they can mow, \( m \), and hours they can babysit, \( b \), to earn $400.

- **M.** \( 10m + 25b = 400 \)
- **P.** \( 10m - 25b = 400 \)
- **R.** \( 25m + 10b = 400 \)
- **S.** \( 25m - 10b = 400 \)

3. Graph the function \( f(x) = \frac{2}{3}x + 4 \).
Two of Ms. Cole’s Earth science classes have 23 students each. Box plots for recent test scores for these two classes are displayed.

**Third Period**

45 50 55 60 65 70 75 80 85 90 95 100

**Fifth Period**

45 50 55 60 65 70 75 80 85 90 95 100

Which statement about the scores is true?

A. The means of the two sets of data are equal.
B. The lower quartiles of the two sets of data are the same.
C. More students in third period than in fifth period scored an 87 or above.
D. Fewer students in third period than in fifth period scored a 70 or below.
A scientist uses the equation \( p(t) = 2^t + 3 \) to model the growth of a bacteria, where \( t \) is the time, in hours, after the scientist begins the experiment.

Which equation is equivalent to the equation the scientist uses?

- **M.** \( p(t) = 8(2^t) \)
- **P.** \( p(t) = 6(2^t) \)
- **R.** \( p(t) = 3(2^t) \)
- **S.** \( p(t) = 2(8^t) \)

The balance of an account after \( t \) years can be found using the expression \( 6000(1.02)^t \) where the initial balance was $6000.

By what percent does the account increase annually?

- **A.** 0.02%
- **B.** 1.02%
- **C.** 2%
- **D.** 102%
The triangles $QTP$ and $SPT$ are shown. Ray $RM$ is the perpendicular bisector of line segment $PT$ and intersects line segment $PT$ at point $M$.

Which transformation would indicate that $\triangle QTP \cong \triangle SPT$?

- **M.** horizontal translation the length of $PR$
- **P.** horizontal translation the length of $PT$
- **R.** reflection over $QT$
- **S.** reflection over $MR$

Triangle 1 is transformed to create Triangle 2 such that sides $RS$, $RT$, and $ST$ are congruent to sides $VW$, $VU$, and $WU$, respectively.

Select the answers that correctly complete the following statement.

$\triangle RST$ must be congruent to $\triangle VWU$ because of the ______ theorem. Thus,

- $\triangle STR$ must be congruent to ______.
  - $\triangle UVW$
  - $\triangle VWU$
  - $\triangle WUV$
Which pair **best** represents a causation relationship?

A. a person’s age and his/her shoe size

B. the number of ice cream cones sold and the amount of sunscreen sold

C. the temperature at a football game and the number of hot drinks sold

D. the number of people attending a ballgame and the length of the ballgame
Two functions are shown.

\[ f(x) = \frac{3}{2}x + 5 \]
\[ g(x) = 5x - 2 \]

Determine the solution of the equation \( f(x) = g(x) \). Plot the functions, \( f(x) \) and \( g(x) \), on the coordinate plane. Then, plot the point or points that show the solution of the equation \( f(x) = g(x) \) on the coordinate plane.
No test material on this page
Directions
Subpart 2 of this test contains various types of assessment questions.

You MAY use a calculator in Subpart 2 of this test.

Sample: Written response (fill in the blank)
The length of a garden is 6 feet more than the width. The area is 40 square feet.

1. Write an algebraic equation to determine the length and width of the garden.
2. What is the length, in feet, of the garden?
Enter your answers in the spaces provided.

1. 

2. 

Do not go on to the next page until told to do so.
No test material on this page
The function \( p(t) = 3(2)^t \) represents the population of a certain type of bacteria after \( t \) days.

What is the population of the bacteria after 5 days?

Write your answer in the space provided.

Solve the inequality.

\[
4x - 7 \geq \frac{-12x + 14}{4}
\]

A. \( x \geq \frac{7}{2} \)

B. \( x \leq \frac{7}{2} \)

C. \( x \geq \frac{3}{2} \)

D. \( x \leq \frac{3}{2} \)
One end of a metal spring is attached to a ceiling. The other end of the spring hangs down.

The table displays the length of the spring when different masses are tied to the end of the spring that hangs down.

<table>
<thead>
<tr>
<th>Mass Tied to Spring (kg)</th>
<th>Length of Spring (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>439.0</td>
</tr>
<tr>
<td>2</td>
<td>439.1</td>
</tr>
<tr>
<td>4</td>
<td>439.2</td>
</tr>
<tr>
<td>6</td>
<td>439.3</td>
</tr>
</tbody>
</table>

How much longer does the spring become with each extra kilogram of mass that is tied to it?

- **M.** 0.01 cm
- **P.** 0.05 cm
- **R.** 0.1 cm
- **S.** 0.5 cm
Jackie buys 3 hot dogs and 1 pretzel from a restaurant for $12.25. Sylvia buys 2 hot dogs and 4 pretzels from the same restaurant for $16.50.

**Part A**
Which system of equations can be used to determine the price of a hot dog, \( h \), and a pretzel, \( p \), at the restaurant?

A. \( 2h + 1p = 12.25 \)
   \( 3h + 4p = 16.50 \)

B. \( 3h + 2h = 12.25 \)
   \( 1p + 4p = 16.50 \)

C. \( 2h + 4p = 12.25 \)
   \( 3h + 1p = 16.50 \)

D. \( 3h + 1p = 12.25 \)
   \( 2h + 4p = 16.50 \)

**Part B**
What is the price of a hot dog at the restaurant?

Enter your answer in the space provided.
Jesse sent an email to 4 people for a school project. In her email, she requested that each person copy and send the same email to 4 additional people. If everyone continues to send the email as requested, which equation could be used to determine the number of emails, $y$, that will be sent for a given round, $x$?

M. $y = x^4$

P. $y = 4^x$

R. $y = 4x$

S. $y = \frac{4}{x}$

The height, in inches, of each student in Megan’s algebra class is shown.

<table>
<thead>
<tr>
<th>54</th>
<th>58</th>
<th>59</th>
<th>62</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>65</td>
<td>66</td>
<td>67</td>
<td>69</td>
<td>70</td>
</tr>
<tr>
<td>70</td>
<td>70</td>
<td>71</td>
<td>72</td>
<td>72</td>
</tr>
</tbody>
</table>

Select the three measures that will be affected if a student who is 77 inches tall joins the class.

A. interquartile range

B. mean

C. median

D. range

E. standard deviation
The graph of two functions is shown on the coordinate plane.

Select all values of $x$ for which $f(x) = g(x)$.

- M. $-2$
- P. $-1$
- R. $0$
- S. $1$
- T. $3$
- V. $4$
John has a goal to ride his bike at least 100 miles this summer. John has ridden 12 miles thus far. There are 40 days left in the summer.

**Part A**
Write an inequality to represent the average distance, \( d \), in miles, John must ride each day for the rest of the summer to achieve his goal.

Enter your inequality in the space provided.

\[
\text{Enter your inequality here.}
\]

**Part B**
Determine the average number of miles John must ride each day to reach **exactly** 100 miles.

Enter your answer in the space provided.

\[
\text{Enter your answer here.}
\]
19 Jamie deposits $627 into a savings account. The account has an interest rate of 3.5%, compounded quarterly.

Write the function that gives the amount of money in dollars, \( J(t) \), in Jamie’s account \( t \) years after the initial deposit.

Write your answer in the space provided.

\[ \text{Answer: } \]

20 \( \triangle RST \) is shown on a coordinate plane.
Create the final image of $\triangle RST$ after reflecting first over the $x$-axis and then over the $y$-axis on the coordinate plane provided.
No test material on this page
No test material on this page
Directions

Subpart 3 of this test contains various types of assessment questions.

You **MAY** use a calculator in Subpart 3 of this test.

Sample: Multiple choice (one correct response)

The vertices of $\triangle PQR$ are $P(-2, 5)$, $Q(2, 2)$ and $R(0, -3)$. A transformation defined by $(x - 3, y + 1)$ is applied to produce the image $\triangle P'Q'R'$.

What are the coordinates of vertex $P'$?

A. $(-5, 4)$
B. $(-5, 6)$
C. $(1, 4)$
D. $(1, 6)$

Do not go on to the next page until told to do so.
No test material on this page
Samatha owns a local ice cream stand. She recorded the high temperatures, in degrees Fahrenheit, and her ice cream sales, in dollars, for eight consecutive days. Her results are shown in the table and scatter plot below.

<table>
<thead>
<tr>
<th>High Temperature (°F)</th>
<th>Ice Cream Sales ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>212</td>
</tr>
<tr>
<td>72</td>
<td>158</td>
</tr>
<tr>
<td>85</td>
<td>160</td>
</tr>
<tr>
<td>68</td>
<td>114</td>
</tr>
<tr>
<td>76</td>
<td>112</td>
</tr>
<tr>
<td>75</td>
<td>136</td>
</tr>
<tr>
<td>69</td>
<td>98</td>
</tr>
<tr>
<td>93</td>
<td>230</td>
</tr>
</tbody>
</table>

Write an equation to represent the line of best fit for this data. Round to the nearest tenth.

Enter your answer in the space provided.
The town of Krannert takes a census of its population every 4 years. The data are displayed in the table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>25,480</td>
</tr>
<tr>
<td>2000</td>
<td>26,520</td>
</tr>
<tr>
<td>2004</td>
<td>27,560</td>
</tr>
<tr>
<td>2008</td>
<td>28,600</td>
</tr>
<tr>
<td>2012</td>
<td>29,640</td>
</tr>
</tbody>
</table>

What is the average yearly change in population in Krannert from 1996 to 2012?

A. 16
B. 260
C. 1040
D. 4160
Karen is buying supplies for a party. She plans to spend at least $100 on food and at least $50 on party favors. She can spend no more than $250 total on food and party favors.

Which graph shows the solution set to the amount of money Karen can spend on food, $f$, and party favors, $p$, and spend no more than $250?
Part of a proof is shown.

Given: $\triangle RST \cong \triangle PTS$, $SP \parallel RT$, and $SR \parallel PT$

Prove: The sum of the measures of the interior angles of $\triangle RST$ is $180^\circ$.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $\triangle RST \cong \triangle PTS$</td>
<td>1. Given</td>
</tr>
<tr>
<td>2. $\angle 1 \cong \angle 4$</td>
<td>2.</td>
</tr>
<tr>
<td>3. $\angle 7 \cong \angle 2$</td>
<td>3.</td>
</tr>
<tr>
<td>4. $m\angle 4 + m\angle 7 + m\angle 3 = 180^\circ$</td>
<td>4. Angles 3, 4, and 7 form a line.</td>
</tr>
<tr>
<td>5. $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$</td>
<td>5.</td>
</tr>
</tbody>
</table>
24 continued

Review each statement of the proof. Then select a reason that correctly supports each statement in lines 2, 3, and 5 to complete the proof.

The reason for statement 2 is

- ○ Substitution
- ○ Vertical angles are congruent.
- ○ Alternate interior angles are congruent.

The reason for statement 3 is

- ○ Substitution
- ○ Corresponding angles are congruent.
- ○ Alternate interior angles are congruent.

The reason for statement 5 is

- ○ Substitution
- ○ Corresponding angles are congruent.
- ○ Alternate interior angles are congruent.

25

Harold’s car has a fuel tank with 12 gallons of fuel in it. The fuel efficiency of Harold’s car is 25 miles per gallon.

Write an equation to represent the amount of fuel remaining, \( f \), in Harold’s car after driving \( m \) miles.

Write your answer in the space provided.
The speed of sound at sea level, in dry air (70°F), is approximately 340 meters per second. Assume the graph correctly shows the distance, \(d\), a sound wave created by a loud noise at sea level has traveled after \(t\) seconds.

![Graph showing distance vs. time]

Which set of numbers is most appropriate to label the seven tick marks along the vertical axis (distance)?

A. 1, 2, 3, 4, 5, 6, 7
B. 70, 140, 210, 280, 350, 420, 490
C. 100, 200, 300, 400, 500, 600, 700
D. 340, 680, 1020, 1360, 1700, 2040, 2380

A rock is thrown from a cliff into a ravine.

The function \(h(t) = -16t^2 + 192t + 2560\) describes the height, in feet, of the rock \(t\) seconds after it is thrown.

What is the height of the rock, in feet, 8 seconds after it is thrown? Enter your answer in the space provided.
As part of a class project, Marshall surveyed 12 students at his school to estimate their exercise and television viewing habits. He created the scatter plot shown to compare the estimated number of minutes spent each day watching television and the estimated number of minutes spent each day exercising.

Marshall models the data with the equation $y = -1.5x + 121$, where $x$ represents the number of minutes spent watching television and $y$ represents the number of minutes spent exercising.
28 continued

Part A
Marshall computed a correlation coefficient of $-0.98$ for the data. What does the coefficient mean in terms of the data he collected?

M. Because $-0.98$ is negative, there is no correlation between the variables.
P. Because $-0.98$ is negative, the correlation between the variables is weak.
R. Because $|-0.98|$ is close to 1, there is a strong correlation between the variables.
S. Because $|-0.98|$ is close to 1, there is a positive correlation between the variables.

Part B
A certain student watches television for an average of 38 minutes per night. Based on Marshall’s model equation, how many minutes will that student spend exercising?

Enter your answer in the space provided.
Part C
What are the meanings of the slope and the \( y \)-intercept for Marshall’s model equation?

Select the two that apply.

A. For every additional minute spent watching television, the number of minutes spent exercising decreases by 1.5.

B. For every additional minute spent exercising, the number of minutes spent watching television decreases by 1.5.

C. For every additional minute spent exercising, the number of minutes spent watching television increases by 1.5.

D. If a student watches no television, the model predicts that the student will exercise for 121 minutes.

E. If a student exercises for more than 80 minutes, the model predicts that the student will not watch television.
Part D
Using the information from the survey and Marshall’s model, which statement is most accurate?

M. A student who does not watch television must exercise more than 100 minutes each day.

P. A student who does not exercise must watch television more than 100 minutes each day.

R. A student who watches more television is more likely to exercise.

S. A student who watches more television is less likely to exercise.

Part E
What is $y = -1.5x + 121$ rewritten as a recursive formula, where $n$ represents the number of minutes spent watching television and $a_n$ represents the number of minutes spent exercising?

A. $a_0 = 1.5; a_n = a_{n-1} - 121$

B. $a_0 = 1.5; a_n = a_{n-1} + 121$

C. $a_0 = 121; a_n = a_{n-1} - 1.5$

D. $a_0 = 121; a_n = a_{n-1} + 1.5$
Part F
Marshall surveyed another set of 12 students and recorded the results in the table shown.

<table>
<thead>
<tr>
<th>Time Spent Watching Television (minutes)</th>
<th>Time Spent Exercising (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>92</td>
</tr>
<tr>
<td>15</td>
<td>74</td>
</tr>
<tr>
<td>20</td>
<td>69</td>
</tr>
<tr>
<td>25</td>
<td>64</td>
</tr>
<tr>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>30</td>
<td>63</td>
</tr>
<tr>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>45</td>
<td>43</td>
</tr>
<tr>
<td>50</td>
<td>41</td>
</tr>
<tr>
<td>60</td>
<td>33</td>
</tr>
<tr>
<td>60</td>
<td>29</td>
</tr>
<tr>
<td>75</td>
<td>14</td>
</tr>
</tbody>
</table>

Based on these results, what is the average rate at which exercise time is reduced for students who watch between 25 and 60 minutes of television?
Rectangle $ABCD$ is shown.

1. The measure of diagonal $BD$ is cm.
   - 15
   - 18
   - 24
   - 30

2. The perimeter of triangle $CDE$ is cm.
   - 33
   - 48
   - 54
   - 57
The owner of a gas station recorded the gallons of gas sold and the amount of precipitation each day for 1 month. The data and the line of best fit are graphed on this scatter plot.

Which value is closest to the correlation coefficient for the data?

- **M.** $-0.93$
- **P.** $-0.07$
- **R.** $0.07$
- **S.** $0.93$
The expression $89,000(0.995)^t$ represents the population of a town $t$ years after 1990.

Select the best choices to complete the sentence below.

The population of the town increases by _______ each year.

- $0.5\%$
- $0.995\%$
- $5\%$
- $99.5\%$
- $995\%$
No test material on this page
Name: ____________________________________

Subpart 1 Practice Test Questions

1.  A  B  C  D  E  (select all that apply)

2.  M  P  R  S

3.  

4.  A  B  C  D

5.  M  P  R  S

6.  A  B  C  D

7.  M  P  R  S
8.  
- ASA  
- SSS  
- SAS  
- AAS  
- UVW  
- VWU  
- WUV

9.  
- A  
- B  
- C  
- D

10. 

The diagram is a Cartesian coordinate system with axes labeled as x and y. The grid is marked from -10 to 10 on both axes.
Subpart 2 Practice Test Questions

11. 

12. A B C D

13. M P R S

14. Part A: A B C D

Part B: 

15. M P R S

16. A B C D E (select three)

17. M P R S T V (select all that apply)

18. Part A: 

Part B: 

19. 

Subpart 3 Practice Test Questions

21. 

22.  

23.  

24.  
- Substitution
- Vertical angles are congruent.
- Alternate interior angles are congruent.

25.  

26.  

27.  

28.  
Part A:  M  P  R  S
Part B:  
Part C:  A  B  C  D  E  (select two)
Part D:  M  P  R  S
Part E:  A  B  C  D
Part F:  

ASSESSMENT MATERIAL  
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<table>
<thead>
<tr>
<th>29.</th>
<th>15</th>
<th>18</th>
<th>24</th>
<th>30</th>
<th>33</th>
<th>48</th>
<th>54</th>
<th>57</th>
</tr>
</thead>
</table>

| 30. | $\square$ | $\square$ | $\square$ | $\square$ |

| 31. | increases | decreases | $\square$ | 0.5% | $\square$ | 0.995% | $\square$ | 5% | $\square$ | 99.5% | $\square$ | 995% |
Subpart 1 Practice Test Questions

1. ● ● ○ ○ ● (select all that apply)
2. ○ ○ ● ●
3. [Graph image]
4. A A ○ ●
5. ● ○ ○ ○
6. A ○ ● ○
7. ○ ○ ○ ●
8. Choose from: 
- ASA
- SSS
- SAS
- AAS

9. Choose: A, B, ●, ○

10. Graph showing a linear relationship with points plotted.

Answer Key

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Subpart 2 Practice Test Questions

11. 96

12. A B C D

13. B C D

14. Part A: A B C D
   Part B: 3.25

15. B C D

16. A B C D (select three)

17. B C D I (select all that apply)

18. Part A: 12 + 40d \geq 100 or equivalent
   Part B: 2.2

19. \[ J(t) = 627 \left(1 + \frac{0.035}{4}\right)^t \text{ or } J(t) = 627(1.00875)^t \] or equivalent
20.

Subpart 3 Practice Test Questions

21. \( y = 4.7x - 214.3 \) (accept +/- 0.1 on \( m \) and \( b \) values) and accept alternate variables (like \( s \) and \( t \) for sales and temperatures).

22. A  ●  C  ○

23. M  P  ●  S
24.  
- Substitution
- Vertical angles are congruent.
- Alternate interior angles are congruent.

25.  
\[ f = 12 - \frac{m}{25} \]

26.  
A B C D

27.  
3072

28.  
Part A: M P R S
Part B:  
64
Part C:  
- Select two
Part D: M P R S
Part E: A B C D
Part F:  
-0.89 or -1
29. 
- 15
- 18
- 24
- 30

- 33
- 48
- 54
- 57

30. [ ] P [ ] R [ ] S

31. 
- increases
- decreases

- 0.5%
- 0.995%
- 5%
- 99.5%
- 995%
No test material on this page
### Subpart 1

<table>
<thead>
<tr>
<th>Key</th>
<th>Standard</th>
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<tbody>
<tr>
<td>A, B, E</td>
<td>M1.F.IF.A.1</td>
</tr>
<tr>
<td>R or C</td>
<td>M1.A.CED.A.2</td>
</tr>
<tr>
<td>Graph of ( f(x) = \frac{2}{3}x + 4 )</td>
<td>M1.F.IF.C.6a</td>
</tr>
<tr>
<td>D</td>
<td>M1.S.ID.A.2</td>
</tr>
<tr>
<td>M or A</td>
<td>M1.A.SSE.B.2a</td>
</tr>
<tr>
<td>C</td>
<td>M1.A.SSE.A.1a</td>
</tr>
<tr>
<td>S or D</td>
<td>M1.G.CO.B.6</td>
</tr>
<tr>
<td>SSS; WUV</td>
<td>M1.G.CO.B.8</td>
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<tr>
<td>C</td>
<td>A1.SI.D.C.7</td>
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<tr>
<td>Graphs of ( f(x) = \frac{3}{2}x + 5 ) and ( g(x) = 5x - 2 ) and point (2, 8)</td>
<td>M1.A.REI.C.4</td>
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### Subpart 2

<table>
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<tr>
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<td>M1.F.IF.A.2</td>
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<tr>
<td>C</td>
<td>M1.A.REI.A.1</td>
</tr>
<tr>
<td>P or B</td>
<td>M1.F.LE.B.4</td>
</tr>
<tr>
<td>D; 3.25</td>
<td>M1.A.REI.B.2</td>
</tr>
<tr>
<td>P or B</td>
<td>M1.F.BF.A.1a</td>
</tr>
<tr>
<td>B, D, E</td>
<td>M1.S.ID.A.3</td>
</tr>
<tr>
<td>P, V or B, F</td>
<td>M1.A.REI.C.4</td>
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<tr>
<td>12 + 40d ( \geq 100 ) or equivalent; 2.2</td>
<td>M1.A.CED.A.1</td>
</tr>
<tr>
<td>( f(t) = 627(1 + 0.035/4)^t ) or ( f(t) = 627(1.00875)^t ) or equivalent</td>
<td>M1.F.LE.A.2</td>
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<tr>
<td>Graph of triangle with vertices ((-1, -2), (-3, -5), ) and ((3, -6))</td>
<td>M1.G.CO.A.5</td>
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### Subpart 3

<table>
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<tr>
<td>y = 4.7x − 214.3 (accept +/− 0.1 on ( m ) and ( b ) values) and accept alternate variables (like ( s ) and ( t ) for sales and temperatures).</td>
<td>M1.S.ID.B.4b</td>
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<tr>
<td>B</td>
<td>M1.F.IF.B.5</td>
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<tr>
<td>R or C</td>
<td>M1.A.CED.A.3</td>
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<tr>
<td>Alternate interior angles are congruent.; Corresponding angles are congruent.; Substitution</td>
<td>M1.CO.C.10</td>
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<tr>
<td>( f = 12 - m/25 )</td>
<td>M1.A.CED.A.2</td>
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<tr>
<td>D</td>
<td>M1.N.Q.A.1</td>
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<tr>
<td>3072</td>
<td>M1.F.IF.A.2</td>
</tr>
<tr>
<td>R or C</td>
<td>M1.S.ID.C.6</td>
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<td>64</td>
<td>M1.S.ID.B.4a</td>
</tr>
<tr>
<td>A, D</td>
<td>M1.S.ID.C.5</td>
</tr>
<tr>
<td>S or D</td>
<td>M1.S.ID.C.7</td>
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<td>C</td>
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<tr>
<td>−0.89 or −1</td>
<td>M1.F.IF.B.5</td>
</tr>
<tr>
<td>30; 48</td>
<td>M1.G.CO.C.11</td>
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<tr>
<td>M or A</td>
<td>M1.S.ID.C.6</td>
</tr>
<tr>
<td>decreases; 0.5%</td>
<td>M1.A.SSE.A.1b</td>
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</tbody>
</table>
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