


Functions

Question 1	Khamis earns AED 25 for grooming a horse plus AED 18.50 per day for boarding the same horse.															
(a)	Write an equation to find the amount of money khamis earned m for grooming a horse once and boarding it for any number of days d															
(b)	<p>Make a table to find his earnings for 5, 6, 7, or 8 days. Then graph the ordered pairs.</p> <table border="1" data-bbox="310 674 880 940"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table> 															

...Chapter Review...

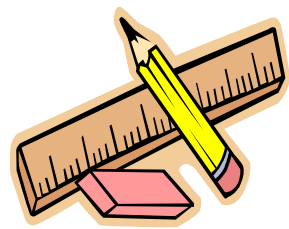
Circle the letter corresponding to the correct answer

1) What is the domain of the relation $\{ (-1, 4), (4, 6), (-3,-7), (2, -1) \}$?			
a) $\{4,6,-7,-1\}$	b) $\{-1,4,-3,2\}$	c) $\{-1,4,6,-3\}$	d) $\{4,6,-1\}$

2) What is the range of the relation $\{ (0, 2), (1, 3), (2,4), (1, 4) \}$?			
a) $\{0,1,2,3\}$	b) $\{1,2,3,4\}$	c) $\{0,1,2\}$	d) $\{2,3,4\}$

3) Which of the following is the best estimate for the square root of 82 ?			
a) 7	b) 8	c) 9	d) 10

4) Eiman's monthly charge for Internet access C is represented by the function $c = 12 + 2.50h$ where h represents the number of hours of usage during a month. What is total charge for a month in which Eiman used the Internet for 9 hours?			
a) AED 39.95	b) AED 34.50	c) AED 27.00	d) AED 22.50



5) Which equation represents a linear function ?			
a) $y = -x^2 - 4$	b) $-3x^2 + 1 = y$	c) $xy = 1$	d) $x + 2 = y$

6) Which of the following represents a nonlinear function ?			
a) $y = 5x + 7$	b) $y = x^2$	c) $y = -2x$	d) $x = y$

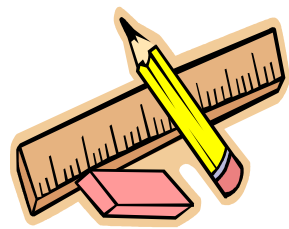
7) Which of the following is the value of $f(-4)$ in the function $f(x) = -2x - 3$?			
a) -11	b) -5	c) 5	d) 11

8) The grocery store sells cantaloupes for AED 4.50 per kilogram. Write a function to represent the price.			
a) $f(x) = x + 4.50$	b) $f(x) = 4.50x$	c) $f(x) = x - 4.50$	d) $f(x) = \frac{x}{4.50}$

9) The graph of a line is shown. Write a function to represent the graph.	
a) $y = 2 - 2x$ b) $y = 1 - 2x$	c) $y = 2 - x$ d) $y = x - 2$

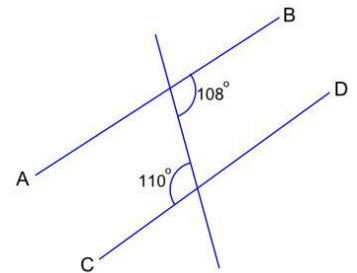
10) Which of the following represents a linear function ?			
a)	b)	c)	d)

11) The graph shows the speed of a car. Which statement is true?	
a) <i>The speed is increasing .</i> b) <i>The speed is decreasing .</i> c) <i>The speed is constant .</i> d) <i>The speed is increasing then decreasing .</i>	



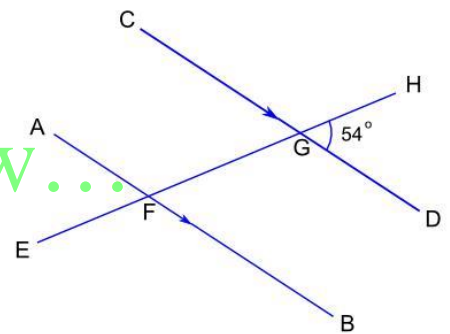
Triangles and the Pythagorean Theorem

12) The straight lines AB and CD



- a) are parallel .
- b) are not parallel because the two given consecutive interior angles do not add to 180° .
- c) are not parallel because the two given corresponding angles are not equal
- d) are not parallel because the two given alternate angles are not equal .

13) AB and CD are parallel lines and EH is a transversal.
What is the size of angle EFB?

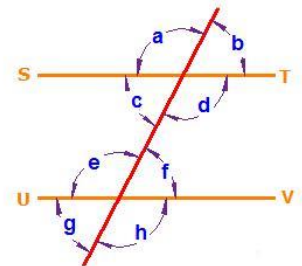


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| a) 54° | b) 126° | c) 136° | d) 144° |
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In the following figure:

Answer question 14-17

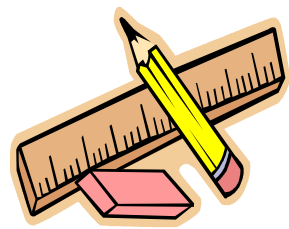


14) ST and UV are parallel lines. c and e are:

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|--------------------------------|-------------------------|
| a) consecutive interior angles | c) vertical angles |
| b) alternate angles | d) corresponding angles |

15) ST and UV are parallel lines. g and f are:

- | | |
|--------------------------------|-------------------------|
| a) consecutive interior angles | c) vertical angles |
| b) alternate angles | d) corresponding angles |



16) ST and UV are parallel lines. d and e are:	
a) consecutive interior angles	c) vertical angles
b) alternate angles	d) corresponding angles

17) ST and UV are parallel lines. d and h are:	
a) consecutive interior angles	c) vertical angles
b) alternate angles	d) corresponding angles

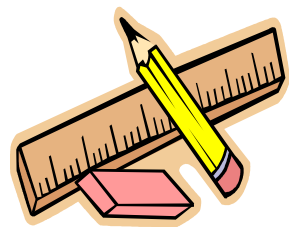
18) PQ and RS are parallel lines and TW is a transversal. The size of angle TUQ is $(x + 12)^\circ$ and the size of angle SVW is $(3x + 48)^\circ$ What is the value of x?			
a) $x = 18$	b) $x = 20$	c) $x = 30$	d) $x = 42$

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19) AB and CD are parallel lines and EH is a transversal. The size of angle EFB is $(2x - 100)^\circ$ and the size of angle CGF is $(x + 52)^\circ$ What is the actual size of the Angle EFB ?			
a) 12°	b) 52°	c) 72°	d) 128°

20) Find the value of x° in the triangle.			
a) 68°	b) 80°	c) 32°	d) 112°

21) Find the sum of the measures of the interior angles of a 13-gon ?			
a) 1890°	b) 1080°	c) 1800°	d) 1980°



22) Find the measures of the exterior angles of a 20-gon ?			
a) 36°	b) 12°	c) 18°	d) 72°

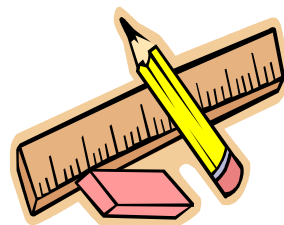
23) Find the value of a in the triangle.			
a) 17	b) 17.5	c) 5	d) 5.5

24) How far up the tree is the cat.			
a) 4.3 m	b) 3.4 m	c) 5.2 m	d) 2.5 m

25) Use the Distance Formula to find the distance between G(-3, -2) and H(-6, 5). Round to nearest tenth, if necessary.			
a) 7.6 units	b) 6.7 units	c) 7.7 units	d) 6.6 units

Transformations

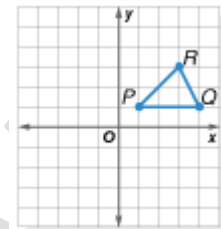
26) Which figure shows the image of $\triangle RST$ after a translation 1 unit to the left and 3 units up?			
a)	b)	c)	d)



27) Parallelogram $MNPQ$ has vertices $M(-2, 0)$, $N(1, 0)$, $P(2, 2)$, and $Q(-1, 2)$. Find the ordered pair that describes the translation if M' has coordinates $(1, 4)$.

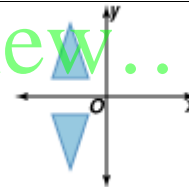
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|--------------|-------------|--------------|-------------|
| a) $(-3, 4)$ | b) $(4, 3)$ | c) $(4, -3)$ | d) $(3, 4)$ |
|--------------|-------------|--------------|-------------|

28) Which figure shows the image of ΔPQR after a reflection over the x-axis?



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| <p>a)</p> | <p>b)</p> | <p>c)</p> | <p>d)</p> |
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29) Name the line of symmetry for the pair of figures.

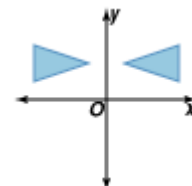


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|-----------|-----------|-----------|-----------------------------|
| a) y-axis | b) x-axis | c) origin | d) None of them is correct. |
|-----------|-----------|-----------|-----------------------------|

30) Rotate $P(2, -9)$ 180° about the origin and identify P' .

- | | | | |
|--------------|--------------|--------------|-------------|
| a) $(-9, 2)$ | b) $(2, -9)$ | c) $(-2, 9)$ | d) $(9, 2)$ |
|--------------|--------------|--------------|-------------|

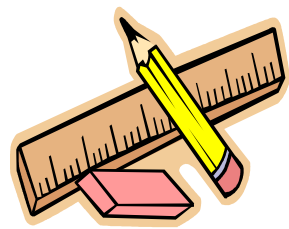
31) Determine whether the pair of figures represents a rotation of 90° , 180° , or a reflection over the x-axis or y-axis.



- | | |
|---|-------------------------------|
| a) reflection over the y-axis | c) 180° rotation |
| b) 90° counterclockwise rotation | d) reflection over the x-axis |

32) A triangle has vertices $A(0, 0)$, $B(-3, 6)$, and $C(0, 9)$. What are the coordinates of the triangle after a dilation with a scale factor of 3?

- | | |
|--|--|
| a) $A'(0, 0)$, $B'(-1, 2)$, and $C'(0, 3)$ | c) $A'(0, 0)$, $B'(-9, 18)$, and $C'(0, 27)$ |
| b) $A'(0, 0)$, $B'(-6, 12)$, and $C'(0, 18)$ | d) $A'(0, 0)$, $B'(-1, 3)$, and $C'(0, 3)$ |



33) Find the coordinates of the image of the point $A(3, 9)$ for a dilation with the scale factor of $\frac{2}{3}$	
a) $A'(0, 0)$, $B'(-1, 2)$, and $C'(0, 3)$	c) $A'(0, 0)$, $B'(-9, 18)$, and $C'(0, 27)$
b) $A'(0, 0)$, $B'(-6, 12)$, and $C'(0, 18)$	d) $A'(0, 0)$, $B'(-1, 3)$, and $C'(0, 3)$

34) In a right triangle, $a = 14.2$ cm and $b = 13.9$ cm. Find c . Round to the nearest tenth.			
a) $c = 14.1$ cm	b) $c = 19.9$ cm	c) $c = 2.9$ cm	d) $c = 0.3$ cm

35) What is the perimeter of the quilt shown?

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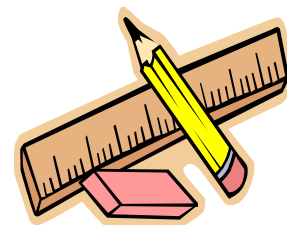
a) 30 in	b) 10 in	c) 56 in	d) 20 in
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36) For safety reasons, the base of a 26-foot ladder should be at least 8 feet from the wall. How high can a 26-foot ladder safely reach?

a) about 24.7 feet	c) about 27.2 feet
b) about 18 feet	d) about 22.6 feet

37) Find the distance between the pair of points whose coordinates are given. Round to the nearest tenth.

a) 5.8	c) 2.4
b) 6.7	d) 1.7



38) Solve $\frac{14}{r} = \frac{21}{48}$

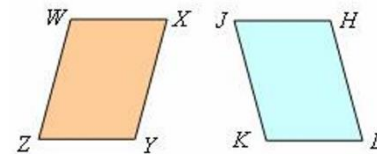
a) $r = 8$

b) $r = 6.125$

c) $r = 32$

d) $r = 16$

39) Determine if the two figures are congruent by using transformations. If so, explain the transformation or transformations that map the first figure onto the second figure



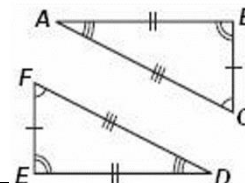
a) *congruent, a counterclockwise rotation of 90° followed by a translation*

b) *congruent, reflection*

c) *congruent, translation*

d) *not congruent*

40) Write congruence statements comparing the corresponding parts in the congruent figures shown.



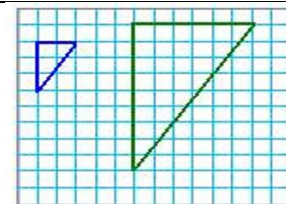
A. Corresponding angles: $\angle A \cong \angle F, \angle B \cong \angle E, \angle C \cong \angle D$
Corresponding sides: $\overline{AB} \cong \overline{FE}, \overline{BC} \cong \overline{ED}, \overline{CA} \cong \overline{DF}$

B. Corresponding angles: $\angle A \cong \angle F, \angle B \cong \angle E, \angle C \cong \angle D$
Corresponding sides: $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \overline{CA} \cong \overline{FA}$

C. Corresponding angles: $\angle A \cong \angle D, \angle B \cong \angle E, \angle C \cong \angle F$
Corresponding sides: $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \overline{CA} \cong \overline{FD}$

D. Corresponding angles: $\angle A \cong \angle D, \angle B \cong \angle E, \angle C \cong \angle F$
Corresponding sides: $\overline{AB} \cong \overline{FE}, \overline{BC} \cong \overline{ED}, \overline{CA} \cong \overline{DF}$

41) Determine if the two figures are similar by using transformations.

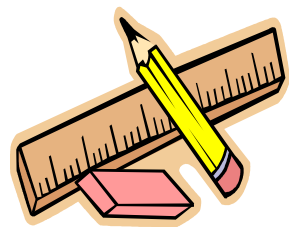


A. Similar; a reflection and a dilation map one figure onto the other.

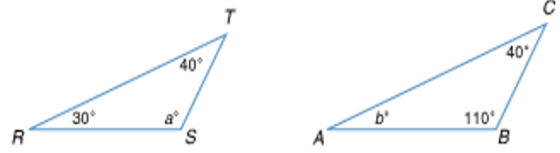
B. Similar; a rotation and a dilation map one figure onto the other.

C. Similar; a translation and a dilation map one figure onto the other.

D. The figures are not similar.

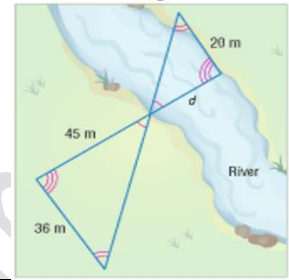


42) Determine whether the triangles are similar.
If not, explain why not



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|------------------|-----------------|----------|-----------------|
| a) $no, b = 110$ | b) $no, b = 40$ | c) yes | d) $no, a = 30$ |
|------------------|-----------------|----------|-----------------|

43) The two triangles shown in the figure are similar. Find the distance d across the river

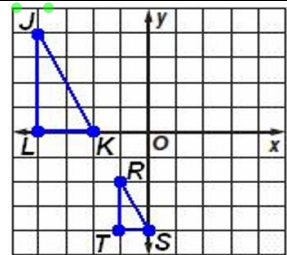


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|--------------|--------------|--------------|--------------|
| a) 81 meters | b) 18 meters | c) 16 meters | d) 25 meters |
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44) A staff's shadow is 8 feet and a tree's shadow is 16 feet. If the staff is 9 feet tall, how tall is the tree?

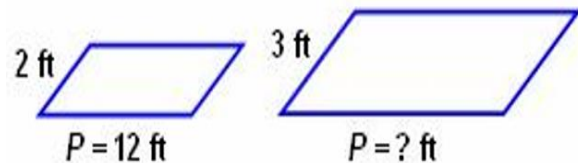
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| a) 15 ft | b) 18 ft | c) 12 ft | d) 9 ft |
|----------|----------|----------|---------|

45) Write a proportion comparing the rise to the run for each of the similar slope triangles and find the numeric value.



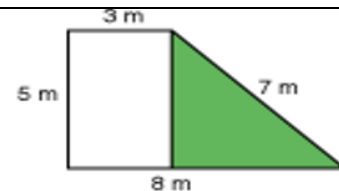
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|--|--|--|--|
| a) $\frac{LK}{JL} = \frac{TS}{RT} = \frac{1}{2}$ | b) $\frac{JL}{LK} = \frac{RT}{TS} = 4$ | c) $\frac{LK}{JL} = \frac{TS}{RT} = \frac{1}{4}$ | d) $\frac{JL}{LK} = \frac{RT}{TS} = 2$ |
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46) The figures shown are similar. Find the **perimeter** of the second figure.

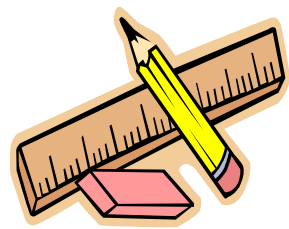


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|---------|----------|----------|----------|
| a) 8 ft | b) 18 ft | c) 12 ft | d) 15 ft |
|---------|----------|----------|----------|

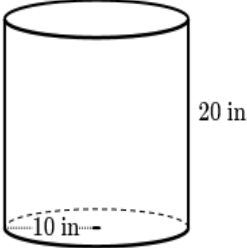
47) Find the **area** of the shaded region.



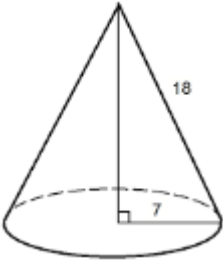
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| a) 40 square meters | b) 23 square meters | c) 56 square meters | d) 12.5 square meters |
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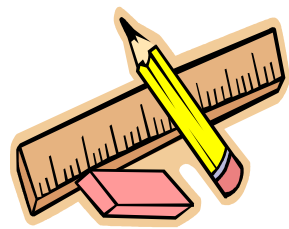


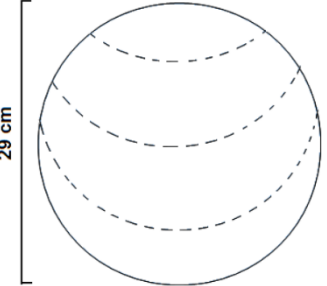
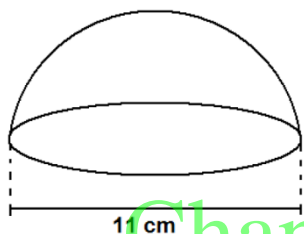
Volume and Surface Area

<p>Cylinder</p>	<p style="text-align: center;">$Volume\ of\ a\ Cylinder = \pi r^2 h$</p> <p>The lateral area L.A. of a Cylinder</p> <p style="text-align: center;">$L.A. = 2\pi rh$</p> <p>The surface area S.A. of a Cylinder</p> <p style="text-align: center;">$S.A. = 2\pi rh + 2\pi r^2$</p>
<p>Example Find</p> <ol style="list-style-type: none"> 1) the volume 2) the lateral area 3) the surface area of the cylinder 	<div style="display: flex; align-items: center;">  <div> <p>$r = 10, h = 20$</p> <ol style="list-style-type: none"> 1) $V = \pi r^2 h = \pi (10)^2 (20) = 6283.2\ in^3$ 2) $L.A. = 2\pi rh = 2\pi (10)(20) = 1256.6\ in^2$ 3) $S.A. = 2\pi rh + 2\pi r^2$ $S.A. = 2\pi (10)(20) + 2\pi (10)^2 = 1885\ in^2$ </div> </div>

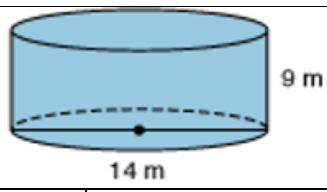
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<p>Cone</p>	<p style="text-align: center;">$Volume\ of\ a\ Cone = \frac{1}{3} \pi r^2 h$</p> <p>The lateral area L.A. of a Cone</p> <p style="text-align: center;">$L.A. = \pi rl$</p> <p>The surface area S.A. of a Cone</p> <p style="text-align: center;">$S.A. = \pi rl + \pi r^2$</p>
<p>Example Find</p> <ol style="list-style-type: none"> 1) the volume 2) the lateral area 3) the surface area of the cone 	<div style="display: flex; align-items: center;">  <div> <p>$d = 14, r = 7, h = 18$</p> <ol style="list-style-type: none"> 1) $V = \frac{1}{3} \pi r^2 h = \frac{1}{3} \pi (7)^2 (18) = 923.6$ 2) $L.A. = \pi rl = \pi (7)(18) = 282.7$ 3) $S.A. = \pi rl + \pi r^2 = \pi (7)(18) + \pi 7^2 = 361.3$ </div> </div>



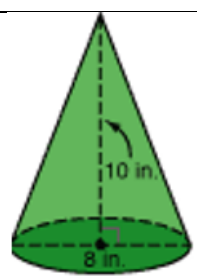
Sphere	$\text{Volume of a Sphere} = \frac{4}{3} \pi r^3$	
<p>Example Find the volume of the sphere</p>	<p>$d = 29, r = 14.5$</p> $V = \frac{4}{3} \pi r^3 = \frac{4}{3} \pi (14.5)^3 = 12770.1 \text{ cm}^3$	
	 <p style="text-align: center;">$d = 11, r = 5.5$</p> $V = \frac{2}{3} \pi r^3 = \frac{2}{3} \pi (5.5)^3 = 348.5 \text{ cm}^3$...Chapter Review...

48) Find the volume of the **cylinder** below to the nearest tenth.

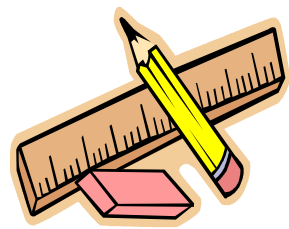


a) 1385.4 m^3	b) 395.8 m^3	c) 2770.9 m^3	d) 5541.8 m^3
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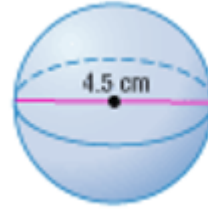
49) Find the volume of the **cone** to the nearest tenth.



a) 125.7 in^3	b) 502.7 in^3	c) 670.2 in^3	d) 167.6 in^3
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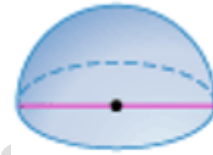


50) Find the **volume** of the **sphere** to the nearest tenth.



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|---------------|---------------|---------------|---------------|
| a) $21.2 m^3$ | b) $26.8 m^3$ | c) $47.7 m^3$ | d) $38.2 m^3$ |
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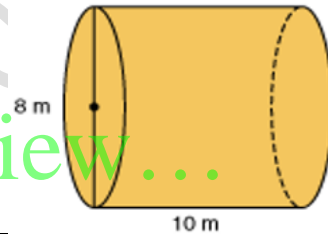
51) Find the **volume** of the **hemisphere**. Round to the nearest tenth



$C = 148 \text{ in.}$

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|---------------------------|---------------------------|---------------------------|---------------------------|
| a) 54744.2 in^3 | b) 29414.7 in^3 | c) 27371.9 in^3 | d) 20528.9 in^3 |
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52) Determine the **surface area** of the **cylinder** below.



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| a) $351.9 m^2$ | b) $251.3 m^2$ | c) $301.6 m^2$ | d) $452.4 m^2$ |
|----------------|----------------|----------------|----------------|

53) If a cone has a circular base whose diameter is 13.5 meters, and it has a slant height of 16.8 meters, find the surface area of the cone.

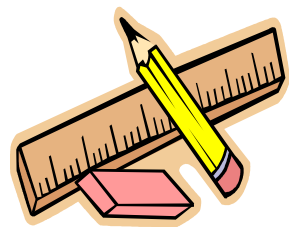
- | | | | |
|----------------|----------------|----------------|----------------|
| a) $572.6 m^2$ | b) $712.5 m^2$ | c) $797.3 m^2$ | d) $499.4 m^2$ |
|----------------|----------------|----------------|----------------|

54) If the side length of a cube is doubled, the surface area is how many times greater?

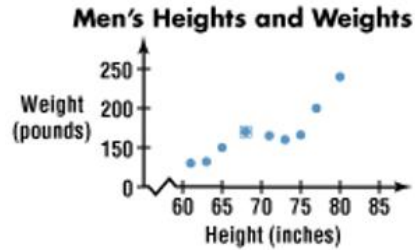
- | | | | |
|----------------------|---------------|------|---------------|
| a) 2×3 or 6 | b) 2^3 or 8 | c) 2 | d) 2^2 or 4 |
|----------------------|---------------|------|---------------|

55) The surface area of a rectangular prism is 78 cm^2 . What is the surface area of a similar prism that is 3 times as large?

- | | | | |
|-------------------------|---------------------------|---------------------------|-------|
| a) 78×3 or 234 | b) 78×3^2 or 702 | c) 78×2^3 or 624 | d) 78 |
|-------------------------|---------------------------|---------------------------|-------|



56) What type of relationship is shown by the scatter plot?



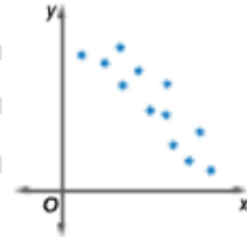
a) *negative*

c) *positive*

b) *no relationship*

d) *both psitive and negative*

56) What type of relationship is shown by the scatter plot?



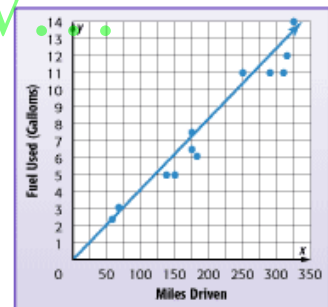
a) *negative non – linear*

c) *positive linear*

b) *negative linear*

d) *positive non – linear*

57) The scatter plot shows the relationship between miles driven and fuel used. Which equation could be used to describe a best-fit line?



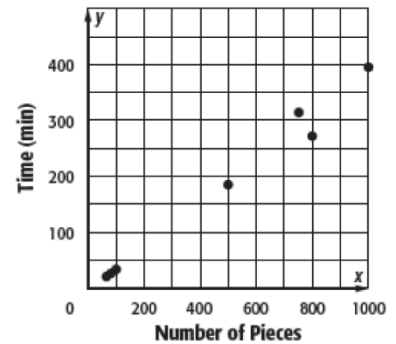
a) $y = \frac{1}{50}x$

b) $y = \frac{1}{45}x$

c) $y = \frac{1}{20}x$

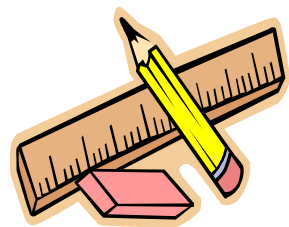
d) $y = \frac{1}{24}x$

58) What type of relationship is shown by the scatter plot?

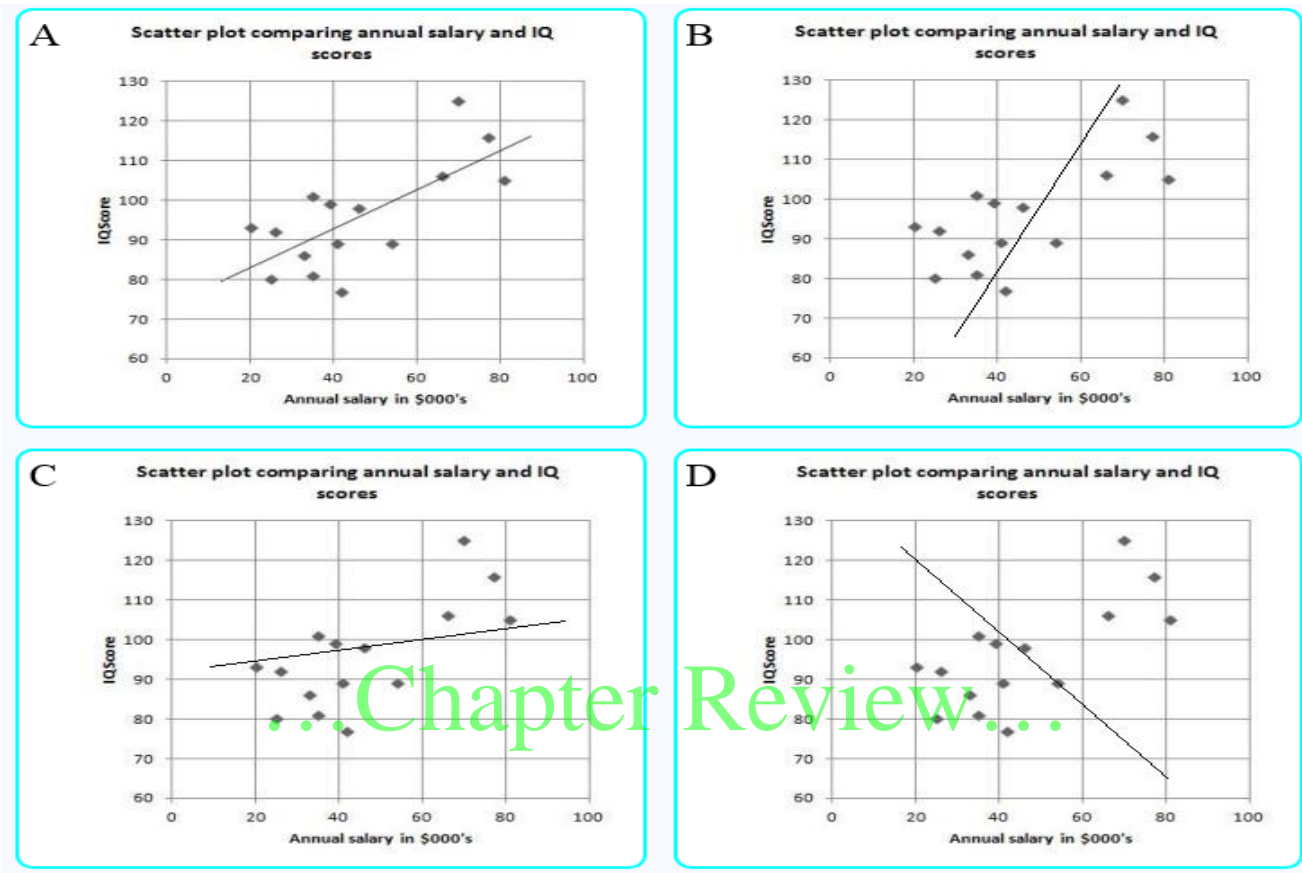


a) The scatter plot shows a positive linear association. There are no clusters or outliers.

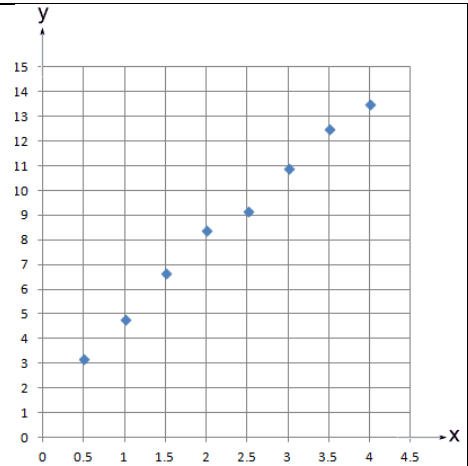
b) The scatter plot shows a negative linear association. There are no clusters or outliers



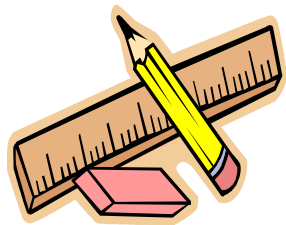
59) Which graph shows the best 'Line of best fit' for the scatter plot?



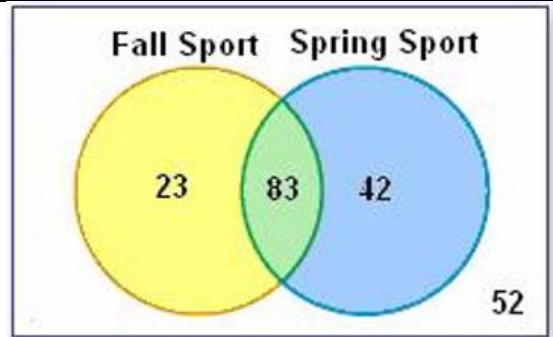
60) The following scatter diagram shows two sets of data, x and y, that show high positive correlation. Which of the following gives the most accurate answer for the equation of the line of best fit?



- | | | | |
|-------------------|-----------------|-----------------|-----------------|
| a) $y = 1.5x + 2$ | b) $y = 2x + 3$ | c) $y = 3x + 1$ | d) $y = 3x + 2$ |
|-------------------|-----------------|-----------------|-----------------|



61) The Venn diagram shows the number of students who play sports in the Fall and the Spring. Choose the two-way table that summarizes the data



a)

	Spring Sport	No Spring Sport	Total
Fall Sport	23	83	106
No Fall Sport	42	52	94
Total	62	135	200

c)

	Spring Sport	No Spring Sport	Total
Fall Sport	83	23	106
No Fall Sport	42	52	94
Total	125	75	200

b)

	Spring Sport	No Spring Sport	Total
Fall Sport	83	42	125
No Fall Sport	23	52	75
Total	106	94	200

d)

	Spring Sport	No Spring Sport	Total
Fall Sport	83	23	106
No Fall Sport	52	42	94
Total	135	65	200

Example

- 1) Find the mean, median, mode, and range of the data set.
- 2) Find the five-number summary of the data.
- 3) Draw a box plot to represent the data.

52, 52, 55, 55, 53,
56, 57, 57, 58

1)

$$\text{mean} = \frac{52+52+55+55+53+56+57+57+58}{9} = \frac{495}{9} = 55$$

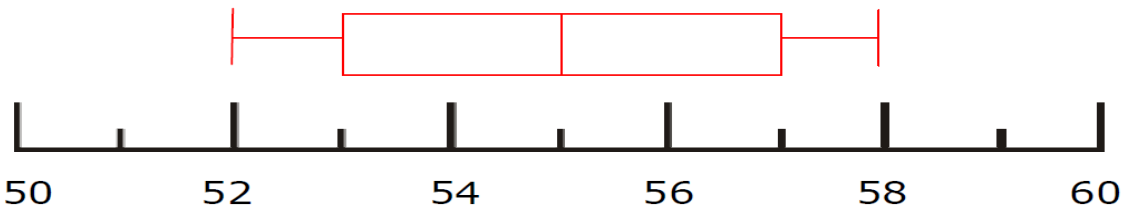
52,52,53,55,55,56,57,57,58 → median = 55

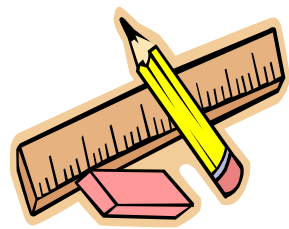
mode = 52, 55, 57

range = 58 - 52 = 6

2) min = 52 , Q1 = 53 , median = 55 , Q3 = 57 , max = 58, 57, 57

3)





62) The number of tickets sold to a play for each showing is 78, 84, 87, 80, 91, 95, and 80. Find the five-number summary for the data.

- A. minimum: 78; Q1: 80; median: 86; Q3: 91; maximum: 95
- B. minimum: 78; Q1: 80; median: 86; Q3: 90; maximum: 95
- C. minimum: 78; Q1: 80; median: 84; Q3: 88; maximum: 96
- D. minimum: 78; Q1: 80; median: 84; Q3: 91; maximum: 95

63) The number of points Jared scored in each basketball game is 26, 30, 25, 18, 23, 28, 34, and 32. Find the mean, median, mode, and range.

- A. mean: 27; median: 23; mode: none; range: 15
- B. mean: 27; median: 28; mode: none; range: 16
- C. mean: 25; median: 25; mode: none; range: 16
- D. mean: 27; median: 27; mode: none; range: 16

Chapter Review

64) The table shows the weights of several watermelons. The standard deviation is about 3.1. Describe the data values that are within one standard deviation of the mean.

- | | |
|---------------------------------|---------------------------------|
| a) <i>between 11.9 and 19.1</i> | c) <i>between 9.8 and 22.2</i> |
| b) <i>between 12.9 and 19.1</i> | d) <i>between 12.4 and 18.6</i> |

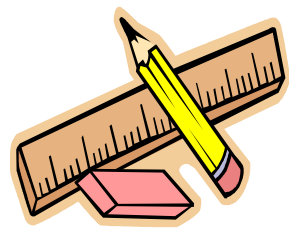
65) is where there are no data values.

- | | | | |
|---------------|----------------|-------------------|-------------------|
| a) <i>gap</i> | b) <i>peak</i> | c) <i>cluster</i> | d) <i>outlier</i> |
|---------------|----------------|-------------------|-------------------|

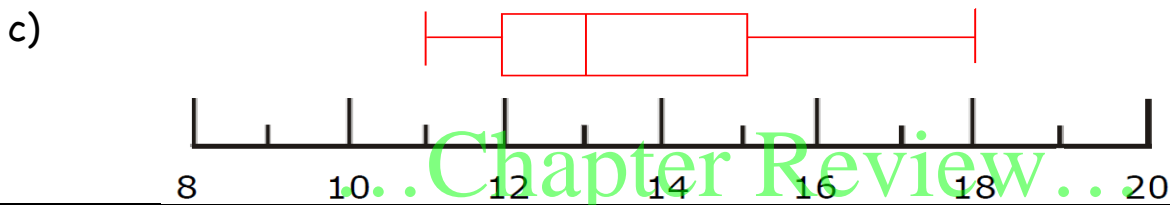
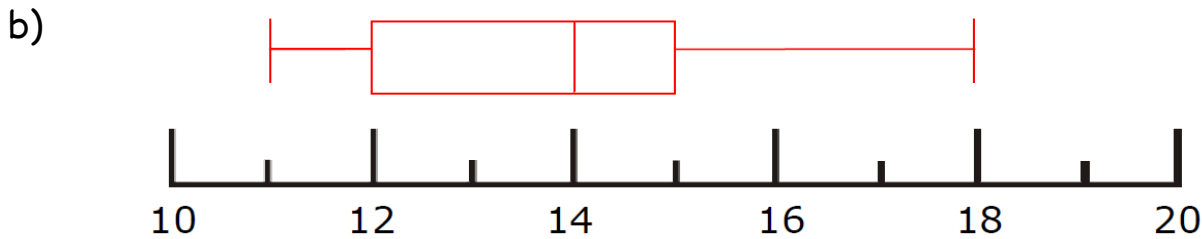
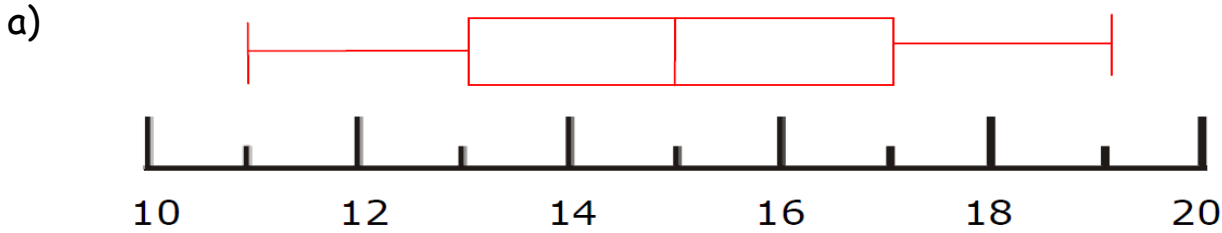
65) The number of hot chocolate drinks sold at concession stands at a soccer tournament is shown in the line plot. Which statement is true about the distribution?



- | | |
|---|--|
| a) <i>There is a peak from 21 – 25.</i> | c) <i>There is a gap between 18 and 21</i> |
| b) <i>The data distribution is symmetric.</i> | d) <i>There is a cluster at 21</i> |



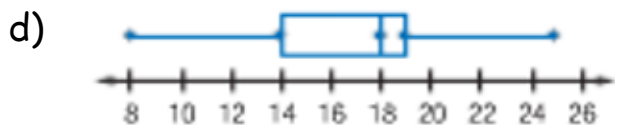
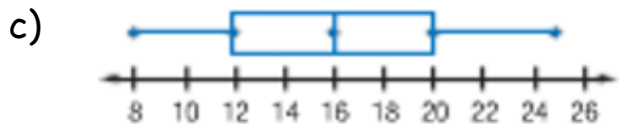
66) Which box plot represents the data set
16, 14, 13, 13, 18, 12, 11, 12, 12



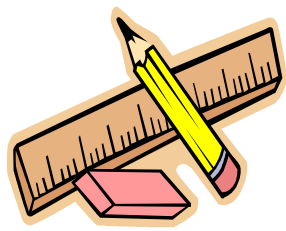
67) The high temperatures for five days are shown below
60°F, 62°F, 58°F, 70°F, 65°F
What is the mean absolute deviation?

- | | | | |
|---------|---------|---------|----------|
| a) 63°F | b) 18°F | c) 23°F | d) 3.6°F |
|---------|---------|---------|----------|

67) Which of the following shows a symmetric distribution



The End



...Chapter Review...