Using the data below, find the particular data types asked.

L = [90, 85, 87, 92, 75, 86, 94, 95, 100, 88, 92]

5. Mean = 89
6. Median = 90
7. Interquartile Range = stats(L) Q3-Q1 8
8. Range = 25
9. Standard Deviation = 6.5

Complete EOG student suggested review

Math 1 EOC Review Sheet

Key

Section 1: Systems of Equations

1. An Algebra teacher is giving a test worth 150 points. The test will have 46 three and five point questions. How many of each question is on the test?

$3x+5y=150$, $x+y=46$

$3x+5y=150$, $-3x-3y=-138$

$\frac{2y}{2}=\frac{12}{2}$

$y=6$ 5pt questions

40 3pt questions

$3(40)+5(6)=150$

$40+6=46$

2. How much of a 25% juice mixture would you have to combine with a 55% juice mixture to create 32 gallons of a 40% juice mixture?

| % | amt |
|---|---|
| 25 | x |
| 55 | 32-x |
| 40 | 32 |

$25x+55(32-x)=32(40)$

$25x+1760-55x=1280$

$\frac{-30x}{-30}=\frac{-480}{-30}$

$x=$ 16 gallons

3. Rich Rhonda collects nickels and quarters. Her piggy bank now holds 30 coins amounting to $5.10. How many of each coin does she have?

x: nickels

y: quarters

$-4(.05x+.25y=5.10) \rightarrow -0.20x-y=-20.4$

$x+y=30$

$1x+1y=30$

$.80x=9.6$

$\frac{.80x}{.8}=\frac{9.6}{.8}$

$x=12$ nickels

18 quarters

$.05(12)+.25(18)=5.1$ ✓

Section 2: Quadratics

$x=12$ nickels

18 quarters

1. Identify the vertex, axis of symmetry, min or max, and range of the following function:

$y=x^2+6x+9$

vertex: $(-3,0)$ $(-3)^2+6(-3)+9$

max or min:

D: ℝ

Axis of symmetry: $x=-3$ $x=\frac{-b}{2a}$ $\frac{-6}{2(1)}$ $\frac{-6}{2}$

range: $y\geq 0$

2. The amount of medicine in Elizabeth's blood is modeled by the function $M(t)=-2t^2+14t$, where $t$ is the number of hours after she takes the medicine.

a. How many hours after Elizabeth takes her medicine is the amount of medicine in her blood the highest? $\frac{-b}{2a}$ $\frac{-14}{2(-2)}=\frac{-14}{-4}=\frac{7}{2}$ 3.5 hr

Can also look for max when graphed

b. What is the highest amount of medicine in Elizabeth's blood? $-2(3.5)^2+14(3.5)$ 24.5

c. When will there be no medicine left in Elizabeth's blood?

$0=-2t^2+14t$

$0=-2t(t-7)$

$t=0$ $t=7$

7 hr

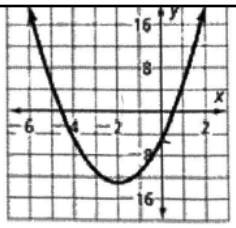
On graph look for positive x-intercept

3. There are three consecutive positive integers such that the product of the smaller two is 34 less than 10 times the largest integer. What is the value of the smallest integer?

$x$
$x+1$
$x+2$

$x(x+1) = 10(x+2)-34$
$x^2+x = 10x+20-34$
$x^2+x = 10x-14$
$-10x+14 \quad -10x+14$
$x^2-9x+14=0$
$(x-7)(x-2)$
$x=7 \quad x=2$

(2), 3, 4
7, 8, 9




4. Which equation matches the graph shown at the right?

a. $y = 8x^2 + 2x - 5$ $\frac{-2}{16}$

b. $y = 8x^2 + 2x + 5$ $\frac{-2}{16}$

c. $y = 2x^2 + 8x - 5$ $\frac{-8}{4}$ $x=-2$ $y\text{-int} = -5$

d. $y = 2x^2 + 8x + 5$

Section 3: Geometry

1. M is the midpoint of AB. If A is located at (6,10) and M is located at (5,7), find the coordinates of B.

(6,10) (5,7) (x,y)

(4,4)

$\frac{x+6}{2} = 5$ $\frac{y+10}{2} = 7$

$x+6=10$ $y+10=14$

$-6 \quad -6$ $-10 \quad -10$

$x=4$ $y=4$

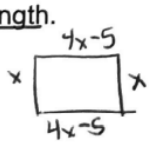
2. Find the perimeter of a triangle if the vertices are located at A(2,1) B(6,-3) and C(1,-7).

$\overline{AB} = \sqrt{4^2+4^2}$ $\overline{BC} = \sqrt{5^2+4^2}$ $\overline{AC} = \sqrt{1^2+8^2}$

$\sqrt{32} + \sqrt{41} + \sqrt{65}$

$\approx 20.12$

3. The length of a rectangle is five less than four times the width. If the perimeter is 50 feet, find the length.




$10x-10=50$

$+10 \quad 10$

$10x=60$

$x=6$

length $= 4x-5$

$4(6)-5$

$24-5$

19 ft

4. The surface area, S, of a cylinder is calculated using the formula $S = 2\pi rl + 2\pi r^2$. What is the equation for this formula solved for l, the length of the cylinder?

$S = 2\pi r l + 2\pi r^2$

$-2\pi r^2 \quad -2\pi r^2$

$\frac{S-2\pi r^2}{2\pi r} = \frac{2\pi rl}{2\pi r}$

or

$\frac{S}{2\pi r} - r = l$

## Section 4: Linear Functions

1. What is the equation of a line parallel to $2x - 3y = 12$ through $(1, -5)$

$2x - 3y = 12$
$-2x \quad -2x$
$\frac{-3y}{-3} = \frac{-2x}{-3} + \frac{12}{-3}$

$m = \frac{2}{3}$

$y = mx + b$
$-5 = (\frac{2}{3})(1) + b$
$-5 = \frac{2}{3} + b$
$-\frac{2}{3} \quad -\frac{2}{3}$
$-\frac{15}{3} - \frac{2}{3} = b$

$y = \frac{2}{3}x - \frac{17}{3}$

2. What is the equation of a line with an undefined slope passing through (3, -4)?

$x = 3$

3. Find the range for the following function given the domain $\{-2, 3, -5\}$ : $y = -4x - 1$

$-4(-2) - 1 = 7$
$-4(3) - 1 = -13$
$-4(-5) - 1 = 19$

$\{-13, 7, 19\}$

Section 5: Scatter Plots

| Age (months) | Weight (lb) |
|---|---|
| 1 | 2.5 |
| 2 | 7.6 |
| 3 | 12.5 |
| 4 | 17.1 |
| 6 | 24.3 |
| 8 | 37.9 |
| 10 | 49.2 |
| 12 | 54.9 |

a) Equation of the Line of Best Fit/linear regression equation: $y = 4.92x - 2.55$

b) What does the slope mean in the context of the problem?
4.92 lbs gained/month

c) What does the y-intercept mean in the context of the problem?
starting weight (although not realistic)

d) Using the trend, how much will the panda weigh when 2 years old? 24mo
$4.92(24) - 2.55 = 115.53$ lbs
Is this realistic? yes

e) What is the correlation coefficient and what does it mean?
$r = .9967$ strong positive

f) What is the residual of a panda that is 6 months old?
$-2.68$

**Section 6: Sequences**

1. Which sequence uses the algebraic expression 4n + 5 to describe the relationship between a term in the sequence and its position, n, in the sequence?

A. 4, 9, 14, 19, 24 ... B. 4, 8, 12, 16, 20 ... C. 9, 13, 17, 21, 25 ... D. 9, 10, 11, 12, 13 ...

2. Complete the table:

| Sequence | Explicit form | Recursive form |
|---|---|---|
| {1, 5, 9, 13, 17, ... } | $y = 4x - 3$ | $a_n = a_{n-1} + 4$ |
| {9, 7, 5, 3, 1, ... } | $y = -2x + 11$ | $a_n = a_{n-1} - 2$ |
| {15, 30, 45, 60, 75, ... } | $y = 15x$ | $a_n = a_{n-1} + 15$ |

Quizizz: Math 1 EOC Review