MATH 8 - Mid-Unit 1 Quiz - [redacted] (PRACTICE) - Solutions

Multiple Choice
Identify the choice that best completes the statement or answers the question.

B 1. Find a square root of 64. $\sqrt{64} = 8$
a. 32 (b. 8) c. 16 d. 32

A 2. Find $\sqrt{144}$. $= 12 \times 12$
(a. 12) b. 72 c. 36 d. 48

D 3. Find the square of $\sqrt{49}$. $\sqrt{49} \times \sqrt{49} = 49$
a. 196 b. 7 c. 2401 (d. 49)

A 4. The area of a square is 24 m^2. Find its side length. side length $= \sqrt{Area} = \sqrt{24}$
(a. $\sqrt{24}$ m) b. $\sqrt{6}$ m c. $\sqrt{96}$ m d. 6 m

C 5. Which whole number is $\sqrt{8}$ closer to? $\sqrt{4} < \sqrt{8} < \sqrt{9}$ → 2 and 3, 3 closer
a. 5 b. 4 (c. 3) d. 2

A 6. Simplify $\sqrt{15} + \sqrt{11}$ to the nearest whole number. (Hint: Calculate each square root individuallly, and then, add those numbers) $\sqrt{16} + \sqrt{9} = 4 + 3 = 7$
(a. 7) b. 8 c. 5 d. 13

D 7. Estimate $\sqrt{48}$ to 1 decimal place.
a. 4.9 b. 15.5 → too high c. 24 → too high (d. 6.9)
$\sqrt{36}$ < $\sqrt{48}$ < $\sqrt{49}$ (close); 6, 7

A 8. The area of square P is 52 cm^2.
Square Q has an area equal to one quarter the area of square P.
Find the approximate side length of square Q.
Give your answer to 1 decimal place.
Area $Q = \left(\frac{1}{4}\right) 52 = 13$
(a. 3.6 cm) b. 5.1 cm c. 13 cm ↗ Not Possible d. 1.8 cm
So side length $= \sqrt{13}$ (between 3 and 4)

Short Answer

9. Which 2 consecutive square numbers is 126 between? 121 and 144

10. Find the area of a square with side length 14 units. Area $= 14^2 = 196$

11. A square book cover has area 25 square units.
Find the perimeter of the book cover. Area: 25 → side 5 → 5, 5, 5, 5
20 [redacted] units

12. Is 5 greater than, less than, or equal to $\sqrt{32}$?
Since $\sqrt{25} = 5$, 5 is less than $\sqrt{32}$

Problem

13. The numbers 2, 3, 5, 7, 11, and 13 are written on separate cards.
Which pairs of numbers give a sum that is a perfect square?

Find all possible solutions. ANSWER: 2+7=9 / 5+11 / 3+13

14. a) On grid paper, draw a square with area 32 square units.
    b) Explain how you know the square has this area.
    c) Write the side length s of the square.

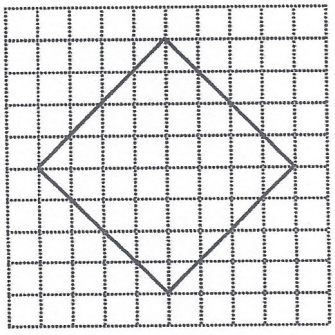
15. Is 5.66 a good estimate of $\sqrt{32}$?
    Justify your answer.

13. 2, 3, 5, 7, 11, 13

- Pairs that when added give a perfect square

~~2+3~~ ~~2+5~~ (2+7) ~~2+11~~ ~~2+13~~
(~~3+5~~) ~~3+7~~ ~~3+11~~ (3+13)
~~5+7~~ (5+11) ~~5+13~~
~~7+11~~ ~~7+13~~
~~11+13~~

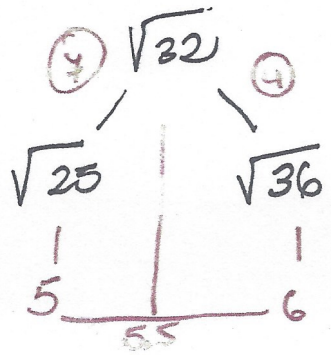
14. ANS:
a)



b) Divide the square into 4 congruent triangles. The area of each triangle is 8 square units. So, the area of the square is 32 square units.

c) $s = \sqrt{32}$ units

15.



- It is between 25 and 36
- this means that $\sqrt{32}$ is between 5 and 6
- Since 32 is closer to 36, we can say $\sqrt{32}$ is bigger than 5.5

$5.66 \times 5.66 = 32.04$ good estimate