

## Math 8 Chapter 1 Review Pack v1

### Answer Section

#### MULTIPLE CHOICE

1. ANS: C                   PTS: 1                   DIF: Easy  
REF: 1.1 Square Numbers and Area Models                   LOC: 8.N1  
TOP: Number           KEY: Conceptual Understanding
2. ANS: A                   PTS: 1                   DIF: Easy  
REF: 1.1 Square Numbers and Area Models                   LOC: 8.N1  
TOP: Number           KEY: Conceptual Understanding
3. ANS: B                   PTS: 1                   DIF: Moderate  
REF: 1.1 Square Numbers and Area Models                   LOC: 8.N1  
TOP: Number           KEY: Conceptual Understanding
4. ANS: A                   PTS: 1                   DIF: Easy               REF: 1.2 Squares and Square Roots  
LOC: 8.N1               TOP: Number           KEY: Conceptual Understanding
5. ANS: C                   PTS: 1                   DIF: Easy               REF: 1.2 Squares and Square Roots  
LOC: 8.N1               TOP: Number           KEY: Conceptual Understanding
6. ANS: C                   PTS: 1                   DIF: Easy               REF: 1.3 Measuring Line Segments  
LOC: 8.N1               TOP: Number           KEY: Conceptual Understanding
7. ANS: B                   PTS: 1                   DIF: Easy               REF: 1.4 Estimating Square Roots  
LOC: 8.N2               TOP: Number           KEY: Conceptual Understanding
8. ANS: C                   PTS: 1                   DIF: Moderate       REF: 1.4 Estimating Square Roots  
LOC: 8.N2               TOP: Number           KEY: Conceptual Understanding
9. ANS: C                   PTS: 1                   DIF: Difficult       REF: 1.4 Estimating Square Roots  
LOC: 8.N2               TOP: Number           KEY: Conceptual Understanding
10. ANS: A                   PTS: 1                   DIF: Moderate       REF: 1.3 Measuring Line Segments  
LOC: 8.N1               TOP: Number           KEY: Conceptual Understanding | Problem-solving Skills
11. ANS: A                   PTS: 1                   DIF: Easy               REF: 1.5 The Pythagorean Theorem  
LOC: 8.N1 | 8.SS1   TOP: Number | Shape and Space (Measurement)  
KEY: Conceptual Understanding
12. ANS: D                   PTS: 1                   DIF: Easy               REF: 1.5 The Pythagorean Theorem  
LOC: 8.N1 | 8.SS1   TOP: Number | Shape and Space (Measurement)  
KEY: Conceptual Understanding
13. ANS: D                   PTS: 1                   DIF: Easy               REF: 1.5 The Pythagorean Theorem  
LOC: 8.N1 | 8.SS1   TOP: Number | Shape and Space (Measurement)  
KEY: Conceptual Understanding
14. ANS: D                   PTS: 1                   DIF: Easy               REF: 1.5 The Pythagorean Theorem  
LOC: 8.N1 | 8.SS1   TOP: Number | Shape and Space (Measurement)  
KEY: Conceptual Understanding
15. ANS: B                   PTS: 1                   DIF: Easy  
REF: 1.6 Exploring the Pythagorean Theorem                   LOC: 8.SS1  
TOP: Shape and Space (Measurement)   KEY: Conceptual Understanding
16. ANS: A                   PTS: 1                   DIF: Easy  
REF: 1.6 Exploring the Pythagorean Theorem                   LOC: 8.SS1  
TOP: Shape and Space (Measurement)   KEY: Conceptual Understanding

17. ANS: B                   PTS: 1                   DIF: Easy  
REF: 1.6 Exploring the Pythagorean Theorem                   LOC: 8.SS1  
TOP: Shape and Space (Measurement)   KEY: Conceptual Understanding
18. ANS: A                   PTS: 1                   DIF: Easy  
REF: 1.7 Applying the Pythagorean Theorem                   LOC: 8.SS1  
TOP: Shape and Space (Measurement)   KEY: Conceptual Understanding
19. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 1.7 Applying the Pythagorean Theorem                   LOC: 8.SS1  
TOP: Shape and Space (Measurement)   KEY: Conceptual Understanding

**SHORT ANSWER**

20. ANS:  
4
- PTS: 1                   DIF: Moderate   REF: 1.2 Squares and Square Roots  
LOC: 8.N1           TOP: Number   KEY: Conceptual Understanding
21. ANS:  
 $121 + 49 = 170$
- PTS: 1                   DIF: Moderate   REF: 1.2 Squares and Square Roots  
LOC: 8.N1           TOP: Number   KEY: Conceptual Understanding
22. ANS:  
 $s = \sqrt{35}$  cm
- PTS: 1                   DIF: Moderate   REF: 1.3 Measuring Line Segments  
LOC: 8.N1           TOP: Number   KEY: Conceptual Understanding
23. ANS:  
 $A = 19$  cm<sup>2</sup>
- PTS: 1                   DIF: Moderate   REF: 1.3 Measuring Line Segments  
LOC: 8.N1           TOP: Number   KEY: Conceptual Understanding
24. ANS:  
 $20^2 + 21^2 = 29^2$   
Quadrilateral ABCD is a rectangle.  
Bennie is correct.
- PTS: 1                   DIF: Moderate   REF: 1.6 Exploring the Pythagorean Theorem  
LOC: 8.SS1           TOP: Shape and Space (Measurement)  
KEY: Conceptual Understanding | Problem-solving Skills
25. ANS:  
7 is less than  $\sqrt{56}$
- PTS: 1                   DIF: Moderate   REF: 1.4 Estimating Square Roots  
LOC: 8.N2           TOP: Number   KEY: Conceptual Understanding

26. ANS:

$$\sqrt{320} \text{ cm}$$

PTS: 1                      DIF: Moderate              REF: 1.5 The Pythagorean Theorem  
 LOC: 8.N1 | 8.SS1      TOP: Number | Shape and Space (Measurement)  
 KEY: Conceptual Understanding

27. ANS:

15 units

PTS: 1                      DIF: Moderate              REF: 1.5 The Pythagorean Theorem  
 LOC: 8.N1 | 8.SS1      TOP: Number | Shape and Space (Measurement)  
 KEY: Conceptual Understanding

**PROBLEM**

28. ANS:

a) Area of rectangle = Area of square =  $15 \times 5 = 75 \text{ cm}^2$ b) When the area is  $A$ , the side length  $s$  is  $\sqrt{A}$ .

$$s = \sqrt{75} \text{ cm}$$

PTS: 1                      DIF: Difficult              REF: 1.3 Measuring Line Segments  
 LOC: 8.N1                  TOP: Number              KEY: Problem-solving Skills

29. ANS:

a) The side length of the square park is:  $\sqrt{476} \doteq 22 \text{ m}$ 

b) To find how much fencing would cost, find the perimeter of the park.

The perimeter of the park is about:  $4 \times 22 \text{ m} = 88 \text{ m}$ The cost of the fencing is:  $88 \text{ m} \times \$18.50/\text{m} = \$1628$ 

PTS: 1                      DIF: Difficult              REF: 1.4 Estimating Square Roots  
 LOC: 8.N2                  TOP: Number              KEY: Communication | Problem-solving Skills

30. ANS:

a)

Check:

Does  $5^2 + 12^2 = 13^2$ ?

$$\begin{array}{ll} \text{L.S.} = 5^2 + 12^2 & \text{R.S.} = 13^2 \\ = 25 + 144 & = 169 \\ = 169 & \end{array}$$

Since  $169 = 169$ , 5-12-13 is a Pythagorean triple.

b)

Check:

Does  $26^2 + 36^2 = 45^2$ ?

$$\begin{array}{ll} \text{L.S.} = 26^2 + 36^2 & \text{R.S.} = 45^2 \\ = 676 + 1296 & = 2025 \\ = 1972 & \end{array}$$

Since  $1972 \neq 2025$ , 26-36-45 is not a Pythagorean triple.

c)

Check:

Does  $24^2 + 70^2 = 84^2$ ?

$$\begin{array}{ll} \text{L.S.} = 24^2 + 70^2 & \text{R.S.} = 84^2 \\ = 576 + 4900 & = 7056 \\ = 5476 & \end{array}$$

Since  $5476 \neq 7056$ , 24-70-84 is not a Pythagorean triple.

d)

Check:

Does  $57^2 + 176^2 = 185^2$ ?

$$\begin{array}{ll} \text{L.S.} = 57^2 + 176^2 & \text{R.S.} = 185^2 \\ = 3249 + 30976 & = 34225 \\ = 34225 & \end{array}$$

Since  $34225 = 34225$ , 57-176-185 is a Pythagorean triple.

PTS: 1                      DIF: Difficult                      REF: 1.6 Exploring the Pythagorean Theorem

LOC: 8.SS1                      TOP: Shape and Space (Measurement)

KEY: Communication | Problem-solving Skills

31. ANS:

$$h^2 = a^2 + b^2$$

Substitute:  $a = 6.8$  and  $b = 3.5$

$$h^2 = 6.8^2 + 3.5^2$$

$$h = \sqrt{46.24 + 12.25}$$

$$h = \sqrt{58.49}$$

$$h \doteq 7.6$$

The length of the diagonal of the carpet is 7.6 m.

PTS: 1                      DIF: Moderate                      REF: 1.7 Applying the Pythagorean Theorem

LOC: 8.SS1                      TOP: Shape and Space (Measurement)

KEY: Communication | Problem-solving Skills