26. A rectangle has an area of 24 square units. The width is 5 units less than the length. What is the length, in units, of the rectangle?

A. 6

C. 3

B. 8

D. 19

Area = lw

$24 = l(l-5)$

$24 = l^2 - 5l$

$-24 \quad -24$

$0 = l^2 - 5l - 24$

$0 = (l-8)(l+3)$

ZPP $l-8=0$ or $l+3=0$

$l = 8$ or $l = -3$

length = 8
width = 3

27. The bowling team at Lincoln High School must choose a president, vice president, and secretary. If the team has 10 members, which expression could be used to determine the number of ways the officers could be chosen?

A. ${}_3P_{10}$

C. ${}_{10}P_3$

B. ${}_7P_3$

D. ${}_{10}P_7$

Actual answer:

${}_{10}P_3 = \frac{10!}{(10-3)!} = \frac{10!}{7!} =$

$10 \cdot 9 \cdot 8 = 720$

Selecting 3 from 10 members, order is important.

28. The table below shows a cumulative frequency distribution of runners' ages.

If not cumulative

Age Group	Total
20-29	8
20-39	18
20-49	25
20-59	31
20-69	35

20-29	8
30-39	10
40-49	7
50-59	6
60-69	4
Total	35 ✓

According to the table, how many runners are in their forties?

A. 25

B. 10

C. 7

D. 6

*subtracted from prior age group
25-18=7
See table.

29. Mr. Turner bought x boxes of pencils. Each box holds 25 pencils. He left 3 boxes of pencils at home and took the rest to school. Which expression represents the total number of pencils he took to school?

A. $22x$

B. $25x - 3$

C. $25 - 3x$

D. $25x - 75$

(# pencils in each box) · (# boxes) =

$25 \cdot (x - 3) =$

Distributing →

$25x - 75$

Note: You may have arrived at this right away by just thinking that 25x represents the amount in general, and then realizing that if you leave behind 3 boxes with 25 pencils each, you would be subtracting 75.

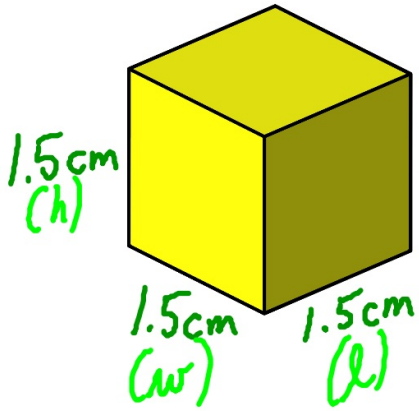
30. Lenny made a cube in technology class. Each edge measured 1.5 cm. What is the volume of the cube in cubic centimeters?

A. 2.25

C. 9.0

B. 3.375

D. 13.5



Volume (rectangular prism) = $l \cdot w \cdot h$

For a cube, each edge is equal, so l, w, and h are all the same.

$V(\text{cube}) = e^3$ (if e = length of edge)

$= (1.5\text{cm})^3 = 3.375\text{cm}^3$

31. Which value of p is the solution of $5p - 1 = 2p + 20$?

A. $\frac{19}{7}$

C. 3

B. $\frac{19}{3}$

D. 7

$5p - 1 = 2p + 20$

$-2p \quad -2p$

$3p - 1 = 20$

$+1 \quad +1$

$3p = 21$

$\frac{3p}{3} = \frac{21}{3}$

$p = 7$

32. The statement $2 + 0 = 2$ is an example of the use of which property of real numbers?

A. associative
C. additive inverse
B. additive identity
D. distributive

Note: Whenever you add 0 to a number, you don't change what you had, you don't change the identity.
Ex: Here, when we add zero to 2, we still have 2 as our sum.

In the same way, if you multiplied by 1, it would be considered the multiplicative identity.