32. For all pairs of real numbers M and V where $M = 3V + 6$, $V = ?$

F. $\frac{M}{3} - 6$

G. $\frac{M}{3} + 6$

H. $3M - 6$

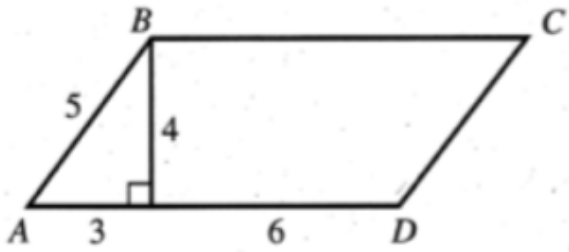
J. $\frac{M-6}{3}$

K. $\frac{M+6}{3}$

$$\frac{m-6}{3} = \frac{3V}{3}$$

$$\frac{m-6}{3} = V$$

33. Parallelogram $ABCD$, with dimensions in inches, is shown in the diagram below. What is the area of the parallelogram, in square inches?



A. 18
B. 36
C. 39
D. 45
E. 72

Area of Parallelogram: bh

$9 \cdot 4 = 36$

34. If $a = b + 2$, then $(b - a)^4 = ?$

F. -16
G. -8
H. 1
J. 8
K. 16

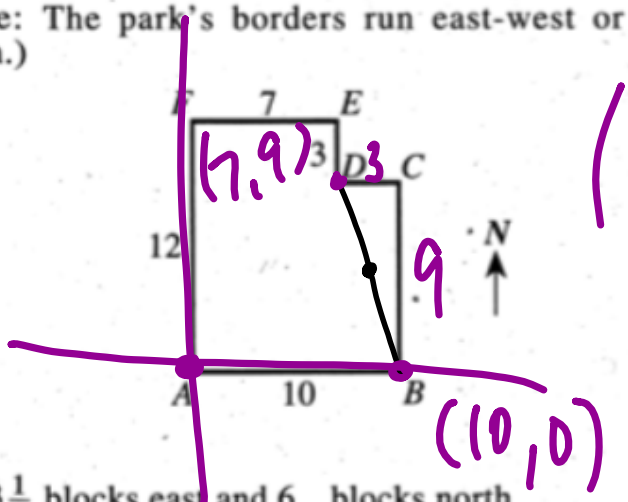
$a = b + 2$

$(b - (b+2))^4$

$(b - b - 2)^4 = (-2)^4$

35. A park has the shape and dimensions in blocks given below. A water fountain is located halfway between point B and point D. Which of the following is the location of the water fountain from point A ?

(Note: The park's borders run east-west or north-south.)



(7,9) $\left(\frac{7+10}{2}, \frac{9+0}{2}\right)$ (10,0) (8.5, 4.5)

A. $3\frac{1}{2}$ blocks east and 6 blocks north

B. 5 blocks east and $4\frac{1}{2}$ blocks north

C. 5 blocks east and 6 blocks north

D. $8\frac{1}{2}$ blocks east and $4\frac{1}{2}$ blocks north

E. 9 blocks east and $7\frac{1}{2}$ blocks north

36. The larger of two numbers exceeds twice the smaller number by 8. The sum of twice the larger and 3 times the smaller number is 65. If x is the smaller number, which equation below determines the correct value of x?

F. $3(2x + 8) + 2x = 65$
G. $3(2x - 8) + 2x = 65$
H. $(4x + 8) + 3x = 65$
J. $2(2x + 8) + 3x = 65$
K. $2(2x - 8) + 3x = 65$

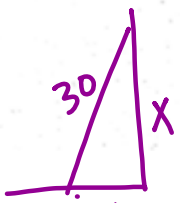
L: $2x+8$

S: x

$2(2x+8)+3x=65$

37. Members of the fire department lean a 30-foot ladder against a building. The side of the building is perpendicular to the level ground so that the base of the ladder is 10 feet away from the base of the building. To the nearest foot, how far up the building does the ladder reach?

A. 10
B. 20
C. 28
D. 31
E. 40



$10^2 + X^2 = 30^2$

$100 + X^2 = 900$

$X^2 = 800$

$X = \sqrt{800}$

10) $\log_2(\log_{16} n) = \log_4(\log_4 n)$

$= \frac{1}{2}\log_2(\log_4 n)$

$\log_2(\log_4 n)^{1/2}$

$\log_{16} n = (\log_4 n)^{1/2}$

$\frac{1}{2}\log_4 n = (\log_4 n)^{1/2}$

$a^2 = 4a$

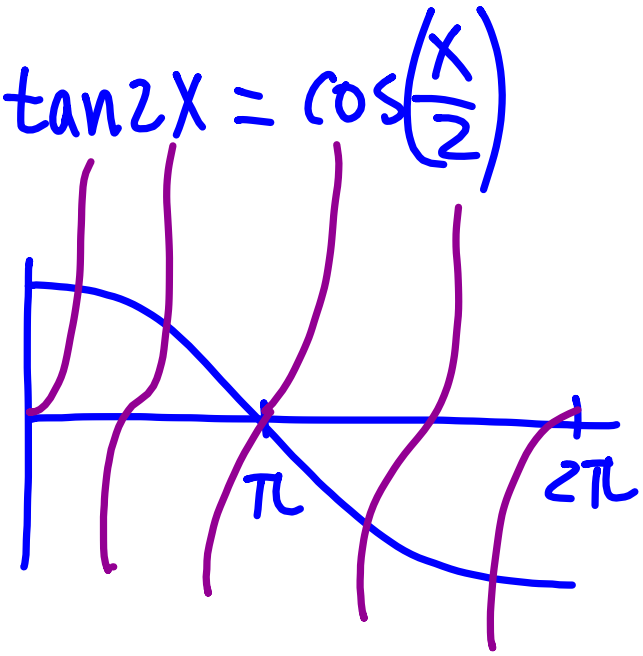
$\frac{a}{2} = \sqrt{a}$ $\frac{a^2}{4} = a$ $a = 0, 4$

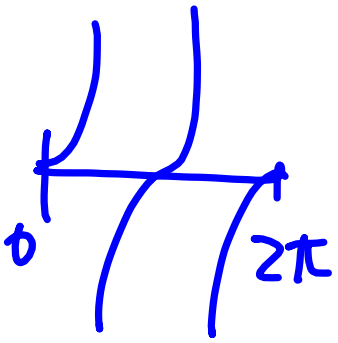
$\log_4 n = a = 4$

$n = 4^4 = 256$ (E) 13

9) $[0, 2\pi]$

$\tan 2x = \cos\left(\frac{x}{2}\right)$

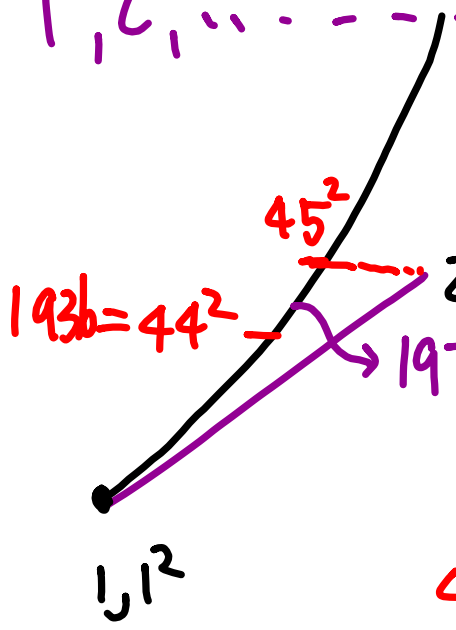




8

$1, 2, 3, \ldots 2020$

$1^2, 2^2, \ldots \ldots 2020^2$



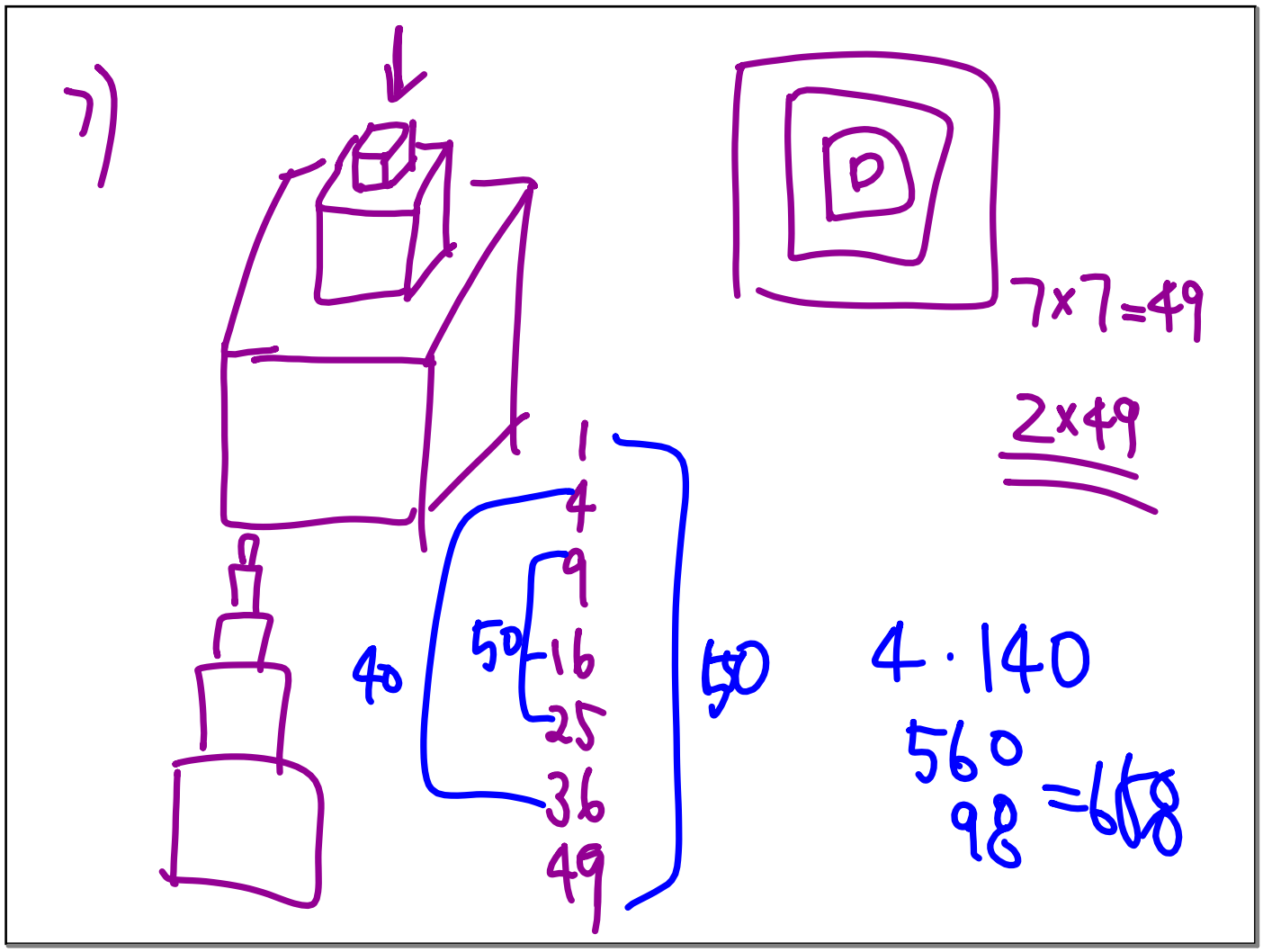
45^2

$= (40+5)^2$

$= 1600 + 400 + 25$

2025

$44^2 = 1600 + 320 + 16$


7)
7×7=49
2×49
1
4
9
16
25
36
49
50
40
50
4·140
560
98
=658

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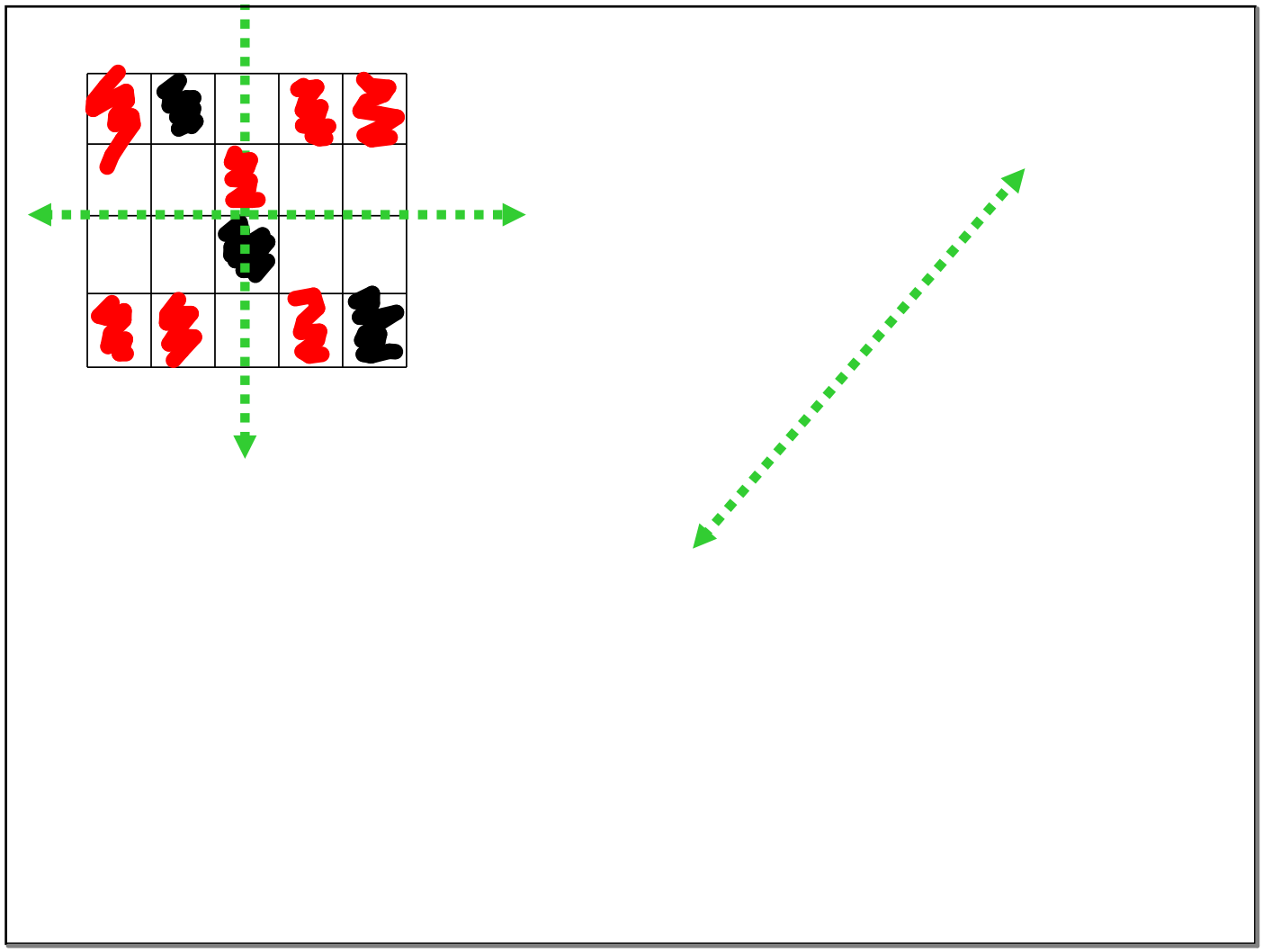

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