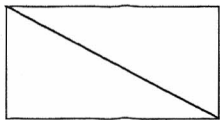


Lesson 10

- 1) direct route
 $18^2 + 24^2 = H^2$
 $324 + 576 = 900$
 30 miles = H
 same way he came
 $18 + 24 = 42$ miles
 $42 - 30 = 12$ miles shorter by direct route
- 2) $15^2 + 36^2 = H^2$
 $225 + 1296 = 1521$
 39 ft. = H
 $39 + 3 = 42$ ft.
- 3) $3^2 + 4^2 = H^2$
 $9 + 12 = 25$
 5 miles = H
 $5 + 5 = 10$ miles
- 4) $20^2 + 48^2 = H^2$
 $400 + 2304 = 2704$
 52 mi. = H
 $P = 20 + 48 + 20 + 48 = 136$ mi.
 $136 + 53 = 188$ miles of fence



- 5) $\frac{A}{B} + \frac{C}{D} = \frac{AD}{BD} + \frac{BC}{BD} = \frac{AD + BC}{BD + BD} = \frac{AD + BC}{1} = \frac{AD}{BC}$
- 6) $\frac{A}{B} \times \frac{D}{C} = \frac{AD}{BC}$
- 7) $\frac{AD}{BC} = \frac{AD}{BC}$
- 8) $\frac{XY}{Z} + \frac{B}{CD} = \frac{XYCD}{ZCD} + \frac{ZB}{ZCD} = \frac{XYCD + ZB}{ZCD + ZCD}$
 $= \frac{XYCD + ZB}{1} = \frac{XYCD}{ZB}$
 $\frac{XY}{Z} \times \frac{CD}{B} = \frac{XYCD}{ZB}$
 The answers are equal.

Lesson 11

- 1) multiply by 3 and add 1
- 2) 202
- 3) divide by 2
- 4) 5/8
- 5) take square root of
- 6) 2
- 7) subtract half of what was subtracted the previous time
- 8) 2 1/2; 2 1/4;
- 9) see figure 1 below
- 10) 2; no
- 11) see figure 2 below
- 12) the number of circles equals the step number squared
- 13) the number of squares equals the step number times 4
- 14) $8^2 = 64$ circles
 $8 \times 4 = 32$ squares

Lesson 12

- 1) 1×36
 2×18
 3×12
 4×9
 6×6
- 2) $P = 2(1) + 2(36) = 2 + 72 = 74$ units
 $P = 2(2) + 2(18) = 4 + 36 = 40$ units
 $P = 2(3) + 2(12) = 6 + 24 = 30$ units
 $P = 2(4) + 2(9) = 8 + 18 = 26$ units
 $P = 2(6) + 2(6) = 12 + 12 = 24$ units
- 3) 6×6
- 4) 6×10
- 5) 1×15
 2×4
 3×3
- 7) $1 \times 5 = 5$ sq. units
 $2 \times 4 = 8$ sq. units
 $3 \times 3 = 9$ sq. units
- 8) $3 \times 3 = 9$ sq. ft.
- 9) The shape she chooses would depend on what she intended it to be used for. Some possibilities:
 $5 \times 5 = 25$ sq. ft.
 $4 \times 6 = 24$ sq. ft.
 $3 \times 7 = 21$ sq. ft.
- 10) They enclose the most space with less exposure.

figure 1

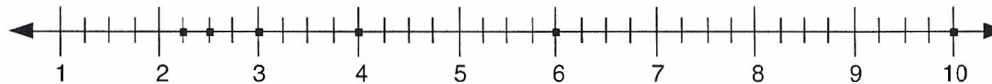


figure 2

step	1	2	3	4	5
circles	1	4	9	16	25
squares	4	8	12	16	20