Jenny purchased 26 magazines for her project research at a total cost of $134. The art related magazines cost $4 each, while the science related magazines cost $7 each. Find the number of art related magazines and science related magazines purchased.

Finding Functions

1) Which table DOES NOT represent a function?

A)

x	y
0	5
1	6
2	7
-1	4

C)

x	y
0	0
1	2
2	4
-1	2

B)

x	y
0	5
1	6
2	7
2	4

D)

x	y
0	0
1	3
2	6
-1	0

Calculate the missing length X. Round to nearest tenth

16 in.

x in.

20 in.

4 in.

y in.
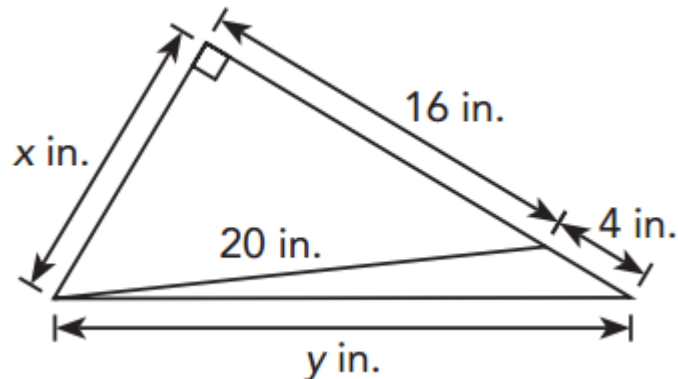
Jenny purchased 26 magazines for her project research at a total cost of $134. The art related magazines cost $4 each, while the science related magazines cost $7 each. Find the number of art related magazines and science related magazines purchased.

Let the number of art magazines be x and the number of science magazines be y.

$x + y = 26$ — Eq. 1
$4x + 7y = 134$ — Eq. 2

Use Eq. 1 to express x in terms of y:

$x = 26 - y$ — Eq. 3

Substitute Eq. 3 into Eq. 2:

$4(26 - y) + 7y = 134$
$104 - 4y + 7y = 134$
$104 + 3y = 134$

$104 + 3y - 104 = 134 - 104$
$3y = 30$
$\dfrac{3y}{3} = \dfrac{30}{3}$
$y = 10$

Substitute 10 for y into Eq. 3:
$x = 26 - 10$
$x = 16$

Jenny purchased 16 art magazines and 10 science magazines.

Finding Functions

Which table DOES NOT represent a function?

A)
x	y
0	5
1	6
2	7
-1	4

C)
x	y
0	0
1	2
2	4
-1	2

B) ✔
x	y
0	5
1	6
2	7
2	4

D)
x	y
0	0
1	3
2	6
-1	0

Calculate the missing length X. Round to nearest tenth

$20^2 = 16^2 + x^2$
$400 = 256 + x^2$
$400 - 256 = 256 + x^2 - 256$
$144 = x^2$
$x = \sqrt{144}$
$x = 12$

16 in.

x in.

20 in.

4 in.

y in.

A total of 95 theme park tickets were sold for $960. Each adult ticket cost $12 and each child's ticket cost $9. Find the number of adult tickets and the number of children's tickets sold.

Paradise
Education Center
Soaring Above The Rest!

Finding Functions

Which table DOES NOT represent a function?

A)

x	y
1	-2
2	-4
-1	2
0	0

C)

x	y
0	0
1	2
-1	4
-1	-2

B)

x	y
1	-2
2	-1
-1	-4
0	-3

D)

x	y
1	-2
2	-4
-1	2
-2	4

Calculate the missing length Y. Round to nearest tenth

16 in.

x in.

20 in.

4 in.

y in.

A total of 95 theme park tickets were sold for $960. Each adult ticket cost $12 and each child's ticket cost $9. Find the number of adult tickets and the number of children's tickets sold.

Let the number of adult tickets be x and the number of children's tickets be y.

$x + y = 95$ — Eq. 1
$12x + 9y = 960$ — Eq. 2

Use Eq. 1 to express x in terms of y:
$x = 95 - y$ — Eq. 3

Substitute Eq. 3 into Eq. 2:
$12(95 - y) + 9y = 960$
$1{,}140 - 12y + 9y = 960$
$1{,}140 - 3y = 960$

$1{,}140 - 3y + 1{,}140 = 960 + 1{,}140$
$-3y = 2{,}100$
$\dfrac{-3y}{-3} = \dfrac{2{,}100}{-3}$
$y = 60$

Substitute 60 for y into Eq. 3:
$x = 95 - 60$
$x = 35$

There were 35 adult tickets and 60 children's tickets sold.

Finding Functions

Which table DOES NOT represent a function?

A)

x	y
1	-2
2	-4
-1	2
0	0

C)

x	y
0	0
1	2
-1	4
-1	-2

✔

B)

x	y
1	-2
2	-1
-1	-4
0	-3

D)

x	y
1	-2
2	-4
-1	2
-2	4

Calculate the missing length Y. Round to nearest tenth

$y^2 = (16 + 4)^2 + 12^2$
$y^2 = 20^2 + 12^2$
$y^2 = 400 + 144$
$y^2 = 544$
$y = \sqrt{544}$
$y \approx 23.3$
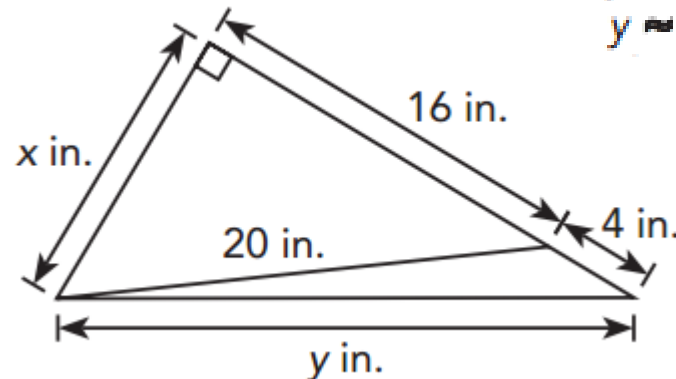
16 in.

x in.

4 in.

20 in.

y in.

A vending machine only accepts dimes and quarters. There are 85 coins in the machine with a total value of $16.75. How many of each coin are in the machine?

Finding Functions
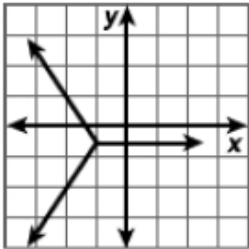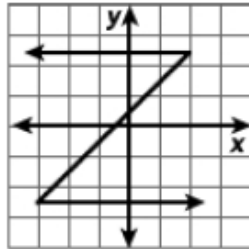
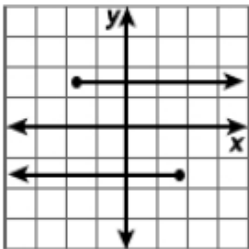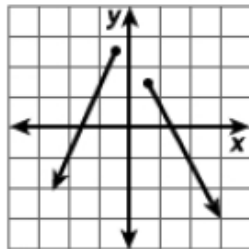Which graph shows y as a function of x?

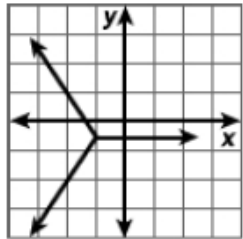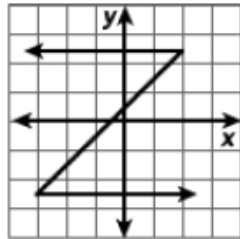Figure 1

Figure 2

Figure 3

Figure 4

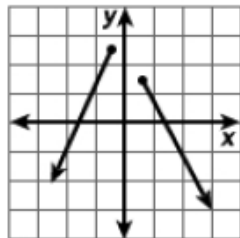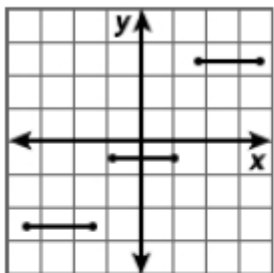**Calculate the missing length X. Round to nearest tenth**

y in.

11 in.

x in.

7 in.
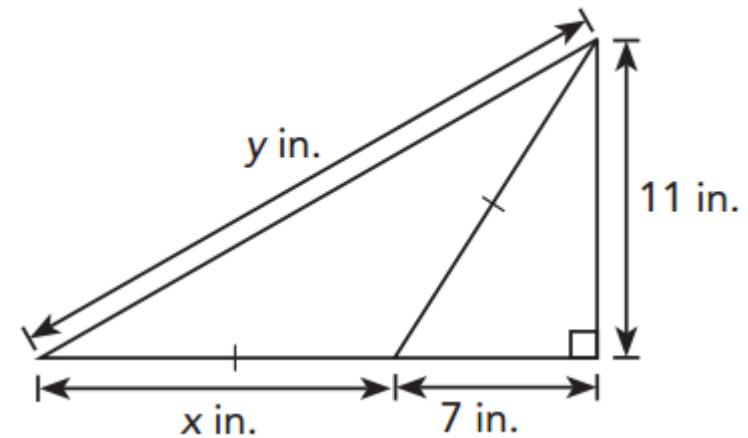
A vending machine only accepts dimes and quarters. There are 85 coins in the machine with a total value of $16.75. How many of each coin are in the machine?

Let the number of quarters be x and the number of dimes be y.

$10x + 25y = 1{,}675$ — Eq. 1
$x + y = 85$ — Eq. 2

Multiply Eq. 2 by 10:
$10(x + y) = 10(85)$
$10x + 10y = 850$ — Eq. 3

Subtract Eq. 3 from Eq. 1:
$(10x + 25y) - (10x + 10y) = 1{,}675 - 850$
$10x - 10x + 25y - 10y = 825$
$15y = 825$
$\dfrac{15y}{15} = \dfrac{825}{15}$
$y = 55$

Substitute 55 for y into Eq. 2:
$x + 55 = 85$
$x + 55 - 55 = 85 - 55$
$x = 30$

There are 30 quarters and 55 dimes in the vending machine.

Finding Functions

Which graph shows y as a function of x?
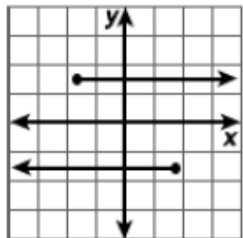
Figure 1

Figure 2

Figure 3

Figure 4 ✔

Calculate the missing length X. Round to nearest tenth

$x^2 = 7^2 + 11^2$
$x^2 = 49 + 121$
$x^2 = 170$
$x = \sqrt{170}$
$x \approx 13.04$
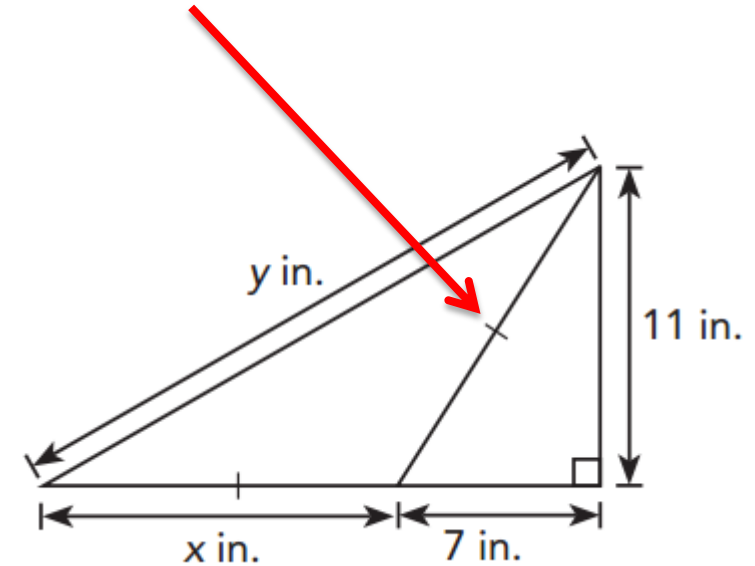
y in.

11 in.

x in.

7 in.

At a fund raising event, a booth was set up to sell handmade cards and photo frames. On the first day, 3 cards and 9 photo frames were sold for a total of $75. The next day, 8 cards and 5 photo frames were sold for a total of $67. Find the selling price of a card

Finding Functions
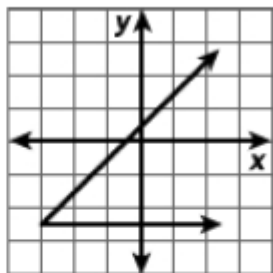
Which graph shows y as a function of x?
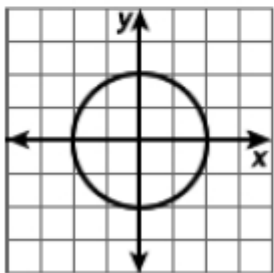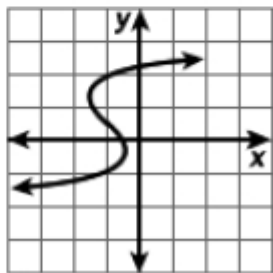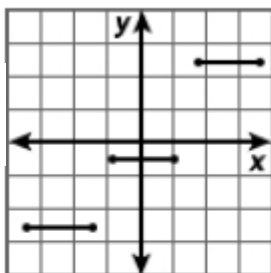

Figure 1

Figure 2

Figure 3

Figure 4

Calculate the missing length Y. Round to nearest tenth

y in.

11 in.

x in.

7 in.
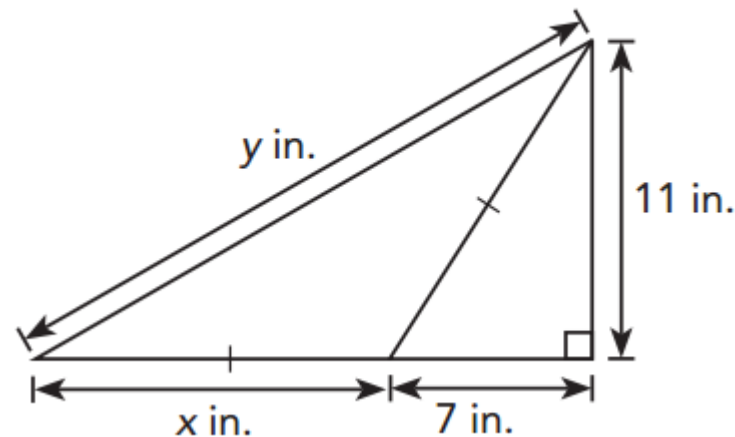
At a fund raising event, a booth was set up to sell handmade cards and photo frames. On the first day, 3 cards and 9 photo frames were sold for a total $(24x + 72y) - (24x + 15y) = 600 - 201$

The next day, 8 cards and 5 photo frames were sold for a total of $67.

Find the selling price of a card and the selling price of a photo frame.

Subtract Eq. 4 from Eq. 3:
$$(24x + 72y) - (24x + 15y) = 600 - 201$$
$$24x - 24x + 72y - 15y = 399$$
$$57y = 399$$
$$\frac{57y}{57} = \frac{399}{57}$$
$$y = 7$$

Let the price of a card be x and the price of a photo frame be y.

| $3x + 9y = 75$ | — Eq. 1 |
| $8x + 5y = 67$ | — Eq. 2 |

Multiply Eq. 1 by 8:
$$8(3x + 9y) = 8(75)$$
$$24x + 72y = 600 \qquad \text{— Eq. 3}$$

Multiply Eq. 2 by 3:
$$3(8x + 5y) = 3(67)$$
$$24x + 15y = 201 \qquad \text{— Eq. 4}$$

Substitute 7 for y into Eq. 2:
$$8x + 5(7) = 67$$
$$8x + 35 = 67$$
$$8x + 35 - 35 = 67$$
$$8x = 32$$
$$\frac{8x}{8} = \frac{32}{8}$$
$$x = 4$$

The selling price of a card is $4 and that of a photo frame is $7.

Finding Functions

Which graph shows y as a function of x?
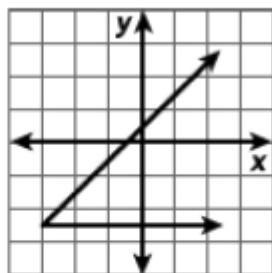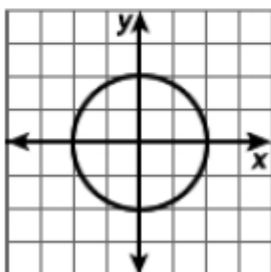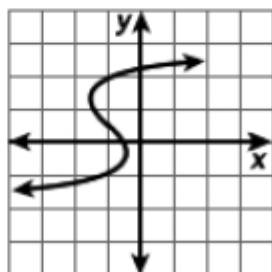

Figure 1

Figure 2

Figure 3

Figure 4

Calculate the missing length y. Round to nearest tenth

The value of x is approximately 13.0.
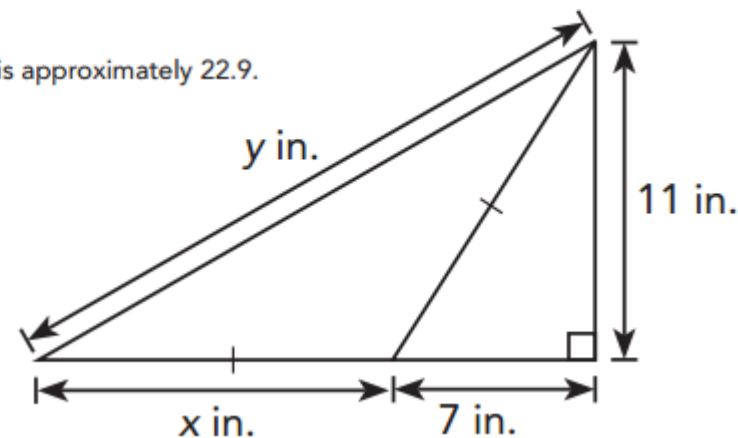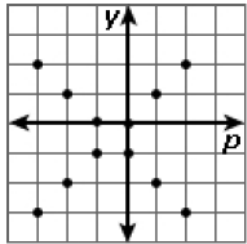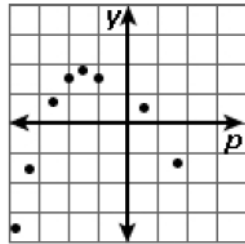$$y^2 \approx 11^2 + (13.04 + 7)^2$$
$$y^2 = 11^2 + 20.04^2$$
$$y^2 \approx 121 + 401.60$$
$$y^2 = 522.60$$
$$y = \sqrt{522.60}$$
$$y \approx 22.9$$
The value of y is approximately 22.9.

y in.

11 in.

x in.

7 in.

Adam bought 5 packets of roasted peanuts and 3 packets of beef jerky for $37.80. Joe bought 3 packets of roasted peanuts and 2 packets of beef jerky for $23.87. Find the cost of a packet of roasted peanuts and a packet of beef jerky.

Finding Functions

Which graph shows y as a function of p?
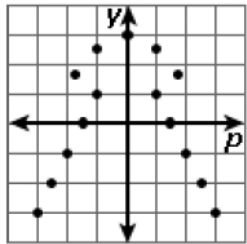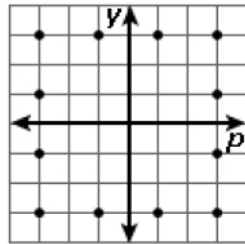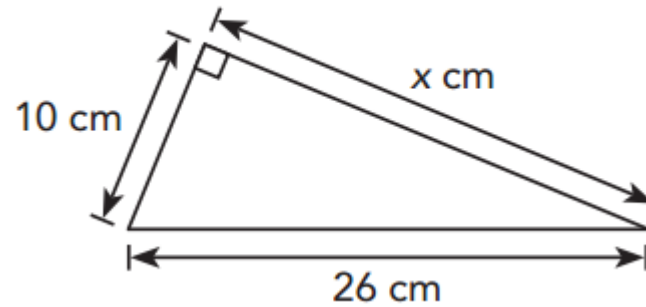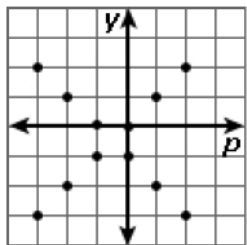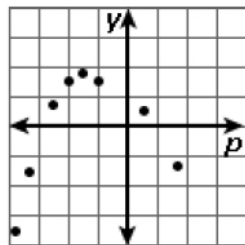
Figure 1

Figure 2

Figure 3

Figure 4

Calculate the missing length X. Round to nearest tenth

10 cm

x cm

26 cm

Adam bought 5 packets of roasted peanuts and 3 packets of beef jerky for $37.80. Joe bought 3 packets of roasted peanuts and 2 packets of beef jerky for $23.87. Find the cost of a packet of roasted peanuts and a packet of beef jerky.

The cost of a packet of roasted peanuts is $3.99 and that of a packet of beef jerky is $5.95.

Finding Functions

Which graph shows y as a function of p?
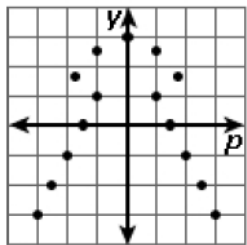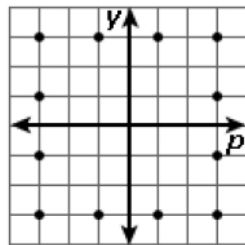
Figure 1

Figure 2 ✔

Figure 3

Figure 4

Calculate the missing length X. Round to nearest tenth

10 cm

x cm

26 cm
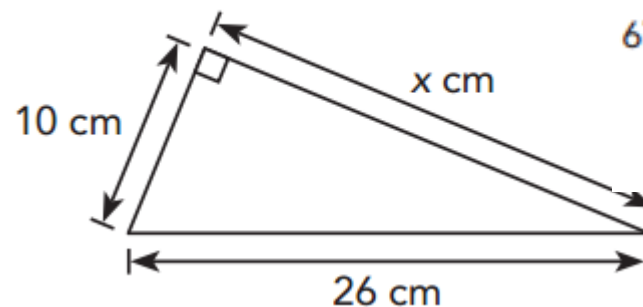
$$26^2 = 10^2 + x^2$$
$$676 = 100 + x^2$$
$$676 - 100 = 100 + x^2 - 100$$
$$576 = x^2$$
$$x = \sqrt{576}$$
$$x = 24$$