Year 8 Class 16 questions

Q1

Solve the equation to find c.

$$13 + 6c = -29$$

$$c = \boxed{} \quad \text{-7}$$

Q2

Solve the equation to find b.

$$23 + 8b = 63$$

$$b = \boxed{} \quad \text{5}$$

Q3

Solve the equation to find y.

$$9y + 12 = 6y + 48$$

$$y = \boxed{} \quad \text{12}$$

Q4

Solve the equation to find z.

$$9z - 8 = 5z + 32$$

$$z = \boxed{} \quad \text{10}$$

Q5

A rectangle's length is 8 cm longer than its width. If its perimeter is 208 cm, find the width.

$$\boxed{} \text{ cm} \quad \text{48}$$

Q6

The graph shows $y = x + 3$ and $y = 2x + 2$.

For $y = x + 3$

when $y = 5$, $x = \boxed{}$ 2

when $y = 0$, $x = \boxed{}$ -3

For $y = 2x + 2$

when $y = 8$, $x = \boxed{}$ 3

when $y = 2$, $x = \boxed{}$ 0

What is the point of intersection?

$$\left(\boxed{} \right) \quad \text{(1,4)}$$
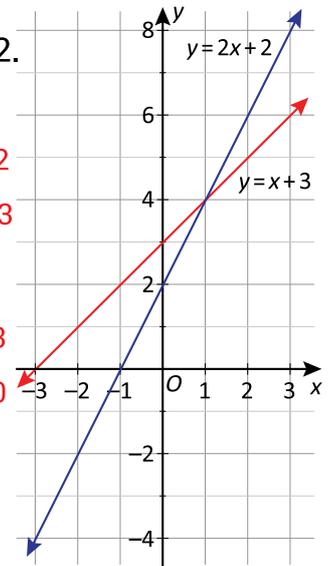
Q7

Solve the equation to find b.

$$45 = 4b + 13$$

$$b = \boxed{} \quad \text{8}$$

Q8

Solve the equation to find a.

$$49 = 5a - 11$$

$$a = \boxed{} \quad \text{12}$$

Q9

Solve the equation to find b.

$$20 = 13 + 7b$$

$$b = \boxed{} \quad \text{1}$$

Q10

Solve the equation to find x.

$$40 - 5x = 3x - 16$$

$x = $ ☐ `7`

Q11

Solve the equation to find b.

$$20 + 3b = 13 - 7b$$

$b = $ ☐ `−0.7`

Q12

Solve the equation to find z.

$$-67 - z = 93 + 9z$$

$z = $ ☐ `−16`

Q13

3 times a number minus 12 is equal to
5 times the number plus 15.
Find the number.

☐ `−13.5`

Q14

Stella is 4 years older than Maria. In 12 years,
Stella will be twice Maria's present age.
How old is Maria now?

☐ `16`

Q15

Leo is 5 years older than Pat. In 10 years,
Leo will be twice Pat's present age.
How old is Leo now?

☐ `20`

Q16

The graph shows
$y = x - 1$ and $y = 2 - 2x$.

For $y = x - 1$
when $y = 2$, $x = $ ☐ `3`
when $y = -3$, $x = $ ☐ `-2`

For $y = 2 - 2x$
when $y = 4$, $x = $ ☐ `-1`
when $y = -4$, $x = $ ☐ `3`

What is the point
of intersection?

(☐) `(1,0)`
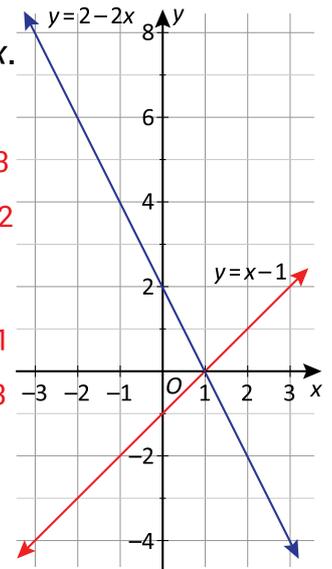
Q17

The graph shows
$y = x + 5$ and $y = 2 - 2x$.

For $y = x + 5$
when $y = 6$, $x = $ ☐ `1`
when $y = 2$, $x = $ ☐ `-3`

For $y = 2 - 2x$
when $y = 6$, $x = $ ☐ `-2`
when $y = -2$, $x = $ ☐ `2`

What is the point
of intersection?

(☐) `(-1,4)`
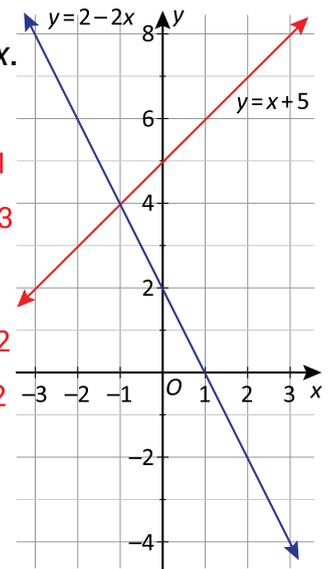
Q18

The graph shows $y = x - 2$ and $y = 1 - 2x$.

For $y = x - 2$

when $y = 1$, $x =$ ☐ 3

when $y = -4$, $x =$ ☐ -2

For $y = 1 - 2x$

when $y = 5$, $x =$ ☐ -2

when $y = 1$, $x =$ ☐ 0

What is the point of intersection?

(☐) (1,-1)
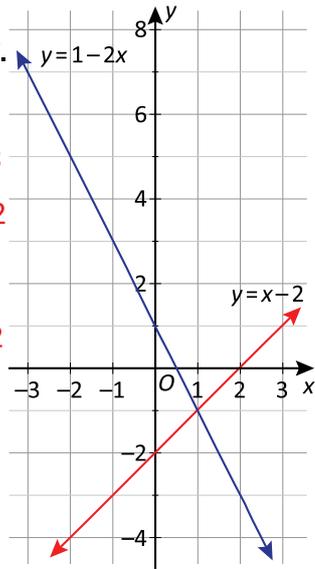
Q19

Solve the equation to find b.

$$2b + 42 = 5b$$

$b =$ ☐ 14

Q20

Solve the equation to find b.

$$72 - 5b = 3b$$

$b =$ ☐ 9

Q21

Solve the equation to find b.

$$3b = 336 - 11b$$

$b =$ ☐ 24

Q22

Solve the equation to find b.

$$8b + 8 - 3b = 24 + 3b$$

$b =$ ☐ 8

Q23

Solve the equation to find z.

$$z + 8 + 8z = 35 - z$$

$z =$ ☐ 2.7

Q24

Solve the equation to find x.

$$5 - 3x + 5x = -8 + 6 + 9x$$

$x =$ ☐ 1

Q25

Olivia is three times Daisy's age now. In 5 years time, Olivia will be twice Daisy's age then.

How old is Daisy now? ☐ 5

Q26

Emily is four times Katie's age now. In 12 years time, Emily will be twice Katie's age then.

How old is Emily now? ☐ 24

Q27

Ella is 12 years older than Sue and Lola is three times Sue's age. The sum of their ages is 57. How old is Lola?

☐ 27

Q28

3 lines are shown:
$$y = 3x + 4$$
$$y = -x$$
$$y = 3 - 2x$$

Use the graph to help solve these equations:

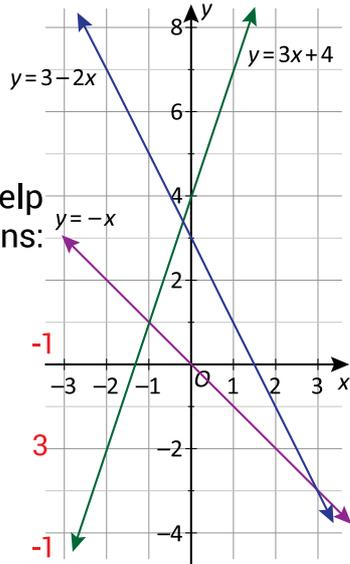$3x + 4 = -x$
Solution is $x =$ ☐ -1

$3 - 2x = -x$
Solution is $x =$ ☐ 3

$3x + 4 = 1$
Solution is $x =$ ☐ -1

$3 - 2x = 6$
Solution is $x =$ ☐ -1.5

Q29

3 lines are shown:
$$y = 2x + 7$$
$$y = 1 - x$$
$$y = 2 - 3x$$

Use the graph to help solve these equations:

$2x + 7 = 2 - 3x$
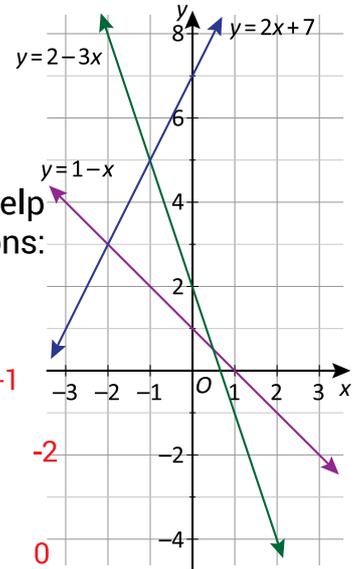Solution is $x =$ ☐ -1

$1 - x = 2x + 7$
Solution is $x =$ ☐ -2

$2 - 3x = 2$
Solution is $x =$ ☐ 0

$2x + 7 = 2$
Solution is $x =$ ☐ -2.5

Q30

3 lines are shown:
$$y = 2x + 2$$
$$y = 5 - x$$
$$y = x - 1$$

Use the graph to help solve these equations:

$2x + 2 = 5 - x$
Solution is $x =$ ☐ 1

$2x + 2 = x - 1$
Solution is $x =$ ☐ -3

$5 - x = x - 1$
Solution is $x =$ ☐ 3

$x - 1 = 5$
Solution is $x =$ ☐ 6