Name:

## Exam Style Questions

### Changing the Subject

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

**Guidance**

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 7

1. Make *w* the subject of the formula

$$y = 3w - a$$

$+a \qquad +a$

$$y + a = 3w$$

$\div 3 \qquad \div 3$

$$\frac{y+a}{3} = w$$

$w = \dfrac{y+a}{3}$

(2)

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2. Make *w* the subject of the formula

$$S = \frac{w}{a}$$

$\times a \quad \times a$

$$aS = w$$

$w = as$

(2)

3.

$v = u + 10t$

(a) Work out the value of v when u = 4 and t = 3

$v = 4 + 10 \times 3$
$= 4 + 30$
$= 34$

v = .......34.........
(2)

(b) Make *u* the subject of the formula

$v = u + 10t$
$-10t \quad -10t$
$v - 10t = u$

u = .......$v - 10t$.........
(2)

(c) Make *t* the subject of the formula

$v = u + 10t$
$-u \quad -u$
$v - u = 10t$
$\div 10 \quad \div 10$
$\dfrac{v - u}{10} = t$

t = .......$\dfrac{v - u}{10}$.........
(2)

4.    Here is a rectangle.

$$2x + 1$$

$$x \quad \boxed{\phantom{xxxxxxxxxxxx}} \quad x$$

$$2x+1$$
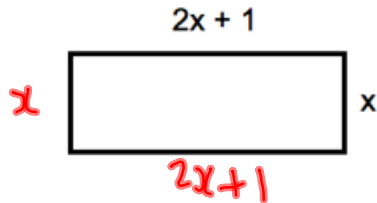
P is the perimeter of the rectangle.

(a) Show that P = 6x + 2

$$P = 2x+1+x+2x+1+x$$
$$P = 6x+2$$

(2)

(b) Express x in terms of P

$$P = 6x + 2$$
$$-2 \qquad -2$$

$$P - 2 = 6x$$
$$\div 6 \qquad \div 6$$

$$\frac{P-2}{6} = x$$

x = $\dfrac{P-2}{6}$ ....................

(2)

5. Make *m* the subject of the formula

$$s = \frac{hm}{4}$$

$\times 4 \quad \times 4$

$4s = hm$

$\div h \quad \div h$

$\frac{4s}{h} = m$

$m = \dfrac{4s}{h}$ ...........................

(2)

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6. Express *v* in terms of *t*

$$t = \frac{v}{4} + 1$$

$-1 \quad -1$

$t - 1 = \dfrac{v}{4}$

$\times 4 \quad \times 4$

$4t - 4 = v$  or  $4(t-1) = v$

$v = $ *see above* ...........................

(2)

7.  Make $d$ the subject of the formula $c = 4d + 5$

$-5 \quad -5$

$c - 5 = 4d$

$\div 4 \quad \div 4$

$\dfrac{c-5}{4} = d$

d = $\dfrac{c-5}{4}$

(2)

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8.  Make $g$ the subject of the formula:

$a = \sqrt{g}$

$a^2 = g$

g = $a^2$

(2)

9. Make *y* the subject of the formula:

$$k = y^2 + a$$

$$-a \quad -a$$

$$k - a = y^2$$

$$\sqrt{k-a} = y$$

$$y = \sqrt{k-a}$$

(2)

10. $C = 4x + 5y$

(a) Find the value of C when $x = 9$ and $y = -2$

$$C = 4 \times 9 + 5 \times -2$$
$$= 36 + (-10)$$
$$= 26$$

$$C = 26$$

(2)

(b) Make *x* the subject of the formula

$$C = 4x + 5y$$
$$-5y \quad -5y$$
$$C - 5y = 4x$$

$$\rightarrow C - 5y = 4x$$
$$\div 4 \qquad \div 4$$
$$\frac{C-5y}{4} = x$$

$$x = \frac{C-5y}{4}$$

(2)

(c) Find the value of x when $C = 51$ and $y = 3$

$$51 = 4x + 15$$
$$-15 \qquad -15$$
$$36 = 4x$$
$$x = 9$$

$$x = 9$$

(2)

11. Make *b* the subject of the formula $a^2 + b^2 = c^2$

$$-a^2 \quad -a^2$$
$$b^2 = c^2 - a^2$$
$$b = \sqrt{c^2 - a^2}$$

$b = \sqrt{c^2 - a^2}$

(2)

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12. Rearrange $y = 2x + 1$ to make x the subject

$$-1 \quad -1$$
$$y - 1 = 2x$$
$$\div 2 \quad \div 2$$
$$\frac{y-1}{2} = x$$

$x = \dfrac{y-1}{2}$

(2)