2.2 Algebra: Equations: 30-minute Pack

Calculator allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Solve each equation. Some solutions are negative.

(a) -2x + 5 = 11 **(2)**

(b) 10 - 3x = 25 **(2)**

2 Solve the equation x + 7 = 12.

(1)

3 Solve the equation 2x = -10.

(1)

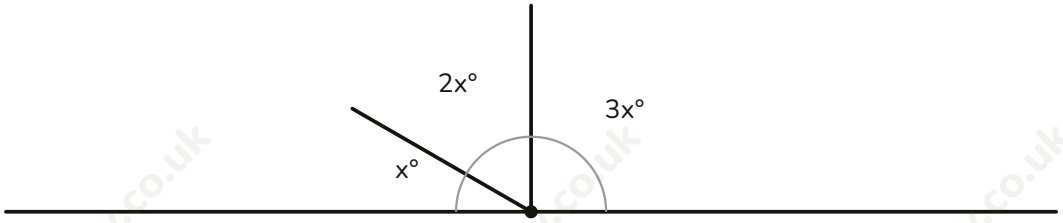
4 Solve the equation x - 6 = -2.

(1)

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5 The diagram shows three angles on a straight line: x degrees, 2x degrees and 3x degrees.

Diagram NOT accurately drawn



(a) Form an equation in x. **(1)**

(b) Solve your equation to find x. **(2)**

.....

(c) Find the size of the largest angle. **(1)**

.....

6 Solve the equation 6 - 2x = -4.

(2)

7 I think of a number, multiply it by 3 and add 3. The answer is 33. Form an equation and solve it to find my number.

(3)

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8 Solve $(2b - 5)/3 = 1$

(3)

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9 A number, n, is multiplied by 3, then 7 is added. The result is the same as when 10 is subtracted from double the number.

(a) Form an equation in n. **(2)**

(b) Solve your equation to find n. **(2)**

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Mark scheme · 2.2 Algebra: Equations: 30-minute Pack

Question 1

(a) -2x = 6 oe	M1
(a) x = -3 (cao)	A1

(a) Answer: **x = -3**

(b) -3x = 15 oe	M1
(b) x = -5 (cao)	A1

(b) Answer: **x = -5**

Question 2

x = 5 (cao)	B1

Answer: **x = 5**

Question 3

x = -5 (cao)	B1

Answer: **x = -5**

Question 4

x = 4 (cao)	B1

Answer: **x = 4**

Question 5

(a) x + 2x + 3x = 180 oe	B1

(a) Answer: **x + 2x + 3x = 180**

(b) 6x = 180 oe	M1
(b) x = 30 (cao)	A1

(b) Answer: **x = 30**

(c) 90 degrees (ft their x, largest = 3x)	B1

(c) Answer: **90 degrees**

Question 6

correct rearrangement, e.g. -2x = -10	M1
x = 5 cao	A1

Answer: **x = 5**

Question 7

3n + 3 = 33 (or equivalent equation)	M1
correct method to solve	M1
10 cao	A1

Answer: **10**

Question 8

multiplies both sides by the denominator	M1
correct second step	M1
b = 4 cao	A1

Answer: **b = 4**

Question 9

(a) 3n + 7 for the left-hand side	B1
(a) 3n + 7 = 2n - 10 oe, correct full equation	B1

(a) Answer: **3n + 7 = 2n - 10**

(b) collects terms correctly, n = -17 route, e.g. n = -10 - 7	M1
(b) n = -17 (cao)	A1

(b) Answer: **n = -17**

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