Timester Challenge
Substitution
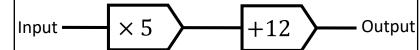
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1) Find the value of y when $x = 3$
$$y = 2x + 5$$

2) 1) Find the value of z when $x = 6$
$$z = 4x - 7$$

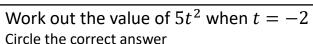---

Input —⬡× 2⬡—⬡−3⬡—Output

Here is a number machine.

1) Work out the output when then input is 4.

2) Work out the input when the output is 29.

A number is input into the machine. The output given is the same number. Work out the number.

Input —⬡× 5⬡—⬡+12⬡—Output

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1) Work out the value of $5t^2$ when $t = -2$
Circle the correct answer

-20 100   20   9

2) $T = \dfrac{h(a+b)}{2}$ Work out the value of T when $h = 3, a = 7 \text{ and } b = 5$
Circle the correct answer

9   52.5   36   18

If n is an even number. What type of number is $n + 1$?

Give a reason for your answer.

Ed is trying to work out the values of e for which $4e - e^3 = 0$ His values are 2 and -2. Are his values correct?.

Give a reason for your answer.

Correct ☐   Incorrect ☐

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Timester Challenge
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Answers

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1) Find the value of y when $x = 3$

$y = 2x + 5$

$y = (2 \times 3) + 5$
$y = 6 + 5$
$y = \mathbf{11}$

2) 1) Find the value of z when $x = 6$

$z = 4x - 7$

$z = (4 \times 6) - 7$
$z = 24 + 7$
$z = \mathbf{17}$

Bronze ★

Input ──▷ × 2 ──▷ −3 ──── Output

Here is a number machine.

1) Work out the output when then input is 4.
$(2 \times 4) - 3$
$= 8 - 3 = \mathbf{5}$

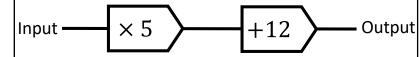2) Work out the input when the output is 29.
$29 + 3 = 32$
$32 \div 2 = \mathbf{16}$

Silver ★

A number is input into the machine. The output given is the same number. Work out the number.

Input ──── × 5 ──▷ +12 ──── Output

$5x + 12 = x$
$4x + 12 = 0$
$4x = -12$
$x = \mathbf{-3}$

Gold ★

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1) Work out the value of $5t^2$ when $t = -2$
Circle the correct answer

-20 100 $\boxed{20}$ 9

2) $T = \dfrac{h(a+b)}{2}$ Work out the value of T when $h = 3, a = 7$ and $b = 5$
Circle the correct answer
9 52.5 36 $\boxed{18}$

Bronze ★

If n is an even number. What type of number is $n + 1$?
Give a reason for your answer.

Even + 1 = odd
E.g. $2 + 1 = 3$
$4 + 1 = 5$
$6 + 1 = 7$

Silver ★

Ed is trying to work out the values of e for which $4e - e^3 = 0$ His values are 2 and -2. Are his values correct?.
Give a reason for your answer.

Correct ✓   Incorrect ☐

$(4 \times 2) - (2)^3$
$= 8 - 8 = 0$

$(4 \times -2) - (-2)^3$
$= -8 - -8$
$= -8 + 8 = 0$

Gold ★