1 Evaluate the following expressions when $x = 5$.

(a) $30 - 2x$ (1)

(b) $x + \frac{2}{3}$ (1)

(c) $8 + \frac{x}{10}$ (1)

(d) $\frac{4x}{5} - 4$ (1)

(e) $0.7x + 2.3$ (1)

(f) $x^2 - 5$ (1)

(6 marks)

2 Evaluate the following expressions when $x = 12$.

(a) $\frac{1}{2}x$ (1)

(b) $0.75x$ (1)

(c) $\frac{7}{6}x$ (1)

(d) $1.4x$ (1)

(4 marks)

3 Evaluate the following expressions when $a = 8$.

(a) $25.7 - 3a$ (1)

(b) $9 + \frac{a}{8}$ (1)

(c) $3a + \frac{1}{2}$ (1)

(d) $10 - \frac{3a}{4}$ (1)

(4 marks)

4 A row of n squares made from toothpicks needs $1 + 3n$ toothpicks altogether. Use that rule.

(a) How many toothpicks for 7 squares? (1)

(b) How many toothpicks for 13 squares? (1)

(c) How many toothpicks for 27 squares? (1)

(d) How many toothpicks for 311 squares? (1)

(e) Another pupil wrote the rule as $4 + 3(n - 1)$. Work out her rule for 7 squares and for 13 squares. (2)

(6 marks)

5 Rectangle A has sides $3x + 5$ and $x + 2$. Rectangle B has sides $5x - 2$ and $2x$.

(a) Which rectangle has the greater perimeter when $x = 2$? Show your working. (2)

(b) Which rectangle has the greater perimeter when $x = 5$? Show your working. (2)

(c) Finish this sentence: *the question "which rectangle is bigger" has no answer until. . .* (2)

(6 marks)

6 Jamie charges $24{,}000$ shillings an hour for coaching, so for p hours he earns $24{,}000p$ shillings.

(a) How much does he earn for $2\frac{1}{2}$ hours? (1)

(b) How long must he work to earn $108{,}000$ shillings? (1)

(2 marks)