Review and EQAO Practice for Chapter 3 – Polynomials

2017

1 Which is a simplified form of this expression?

$$\frac{x^8(x^6)}{x^4}$$

a x^8

b x^{10}

c x^{12}

d x^{18}

3 Which of the following is a simplified form of

$$(-2m + 3) - (5m - 6)?$$

a $3m - 3$

b $3m + 9$

c $-7m - 3$

d $-7m + 9$

2016

1 A ball is dropped from a height of 25 m. The ball's height, H, in metres, after n bounces is represented by the equation below.

$$H = 25\left(\frac{1}{2}\right)^n$$

What is the height of the ball after 4 bounces?

a $\frac{25}{16}$ m

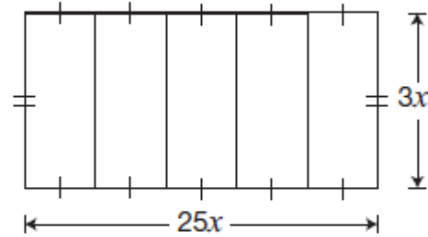b $\frac{25}{8}$ m

c $\frac{25}{4}$ m

d $\frac{25}{2}$ m

4 Which of the following is equivalent to

$$3(5x - 1) - 2(3x + 5)?$$

a $9x - 13$

b $9x + 4$

c $21x - 13$

d $21x + 4$

2015

1 A rectangle is divided into 5 equal sections as pictured below.

Which of the following represents the area of **one** section?

a $8x$

b $8x^2$

c $15x$

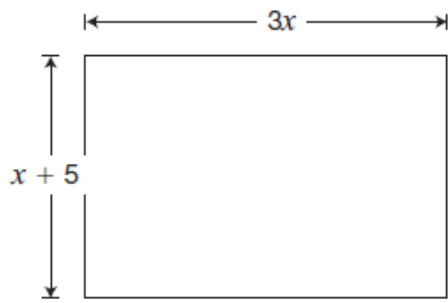d $15x^2$

2 The table below contains five expressions.

$p \times p \times p \times p \times p \times p$
$p^2 \times p^2 \times p^2$
$p^2 \times p^3$
p^5
p^6

How many of these expressions are equivalent to $(p^2)^3$?

a 1

b 2

c 3

d 4

2015

3 A rectangle is shown below with algebraic expressions for its length and width in centimetres.

Which expression represents the area of the rectangle in cm²?

a $4x + 5$

b $8x + 10$

c $3x^2 + 5$

ⓓ $3x^2 + 15x$

4 What is the solution to the equation below?

$$\frac{2}{3}x - 4 = 20$$

a $x = 12$

b $x = 16$

c $x = 24$

ⓓ $x = 36$

2014

2 What goes in the ☐ to complete the equation below?

$$(8x^3)(\square) = 24x^{12}$$

ⓐ $3x^9$

b $3x^4$

c $16x^9$

d $16x^4$

5 What is the value of x in the equation

$$-4(2x - 1) = 36?$$

ⓐ -4

b $-\frac{35}{8}$

c $-\frac{37}{8}$

d -5

11 What is the value of P in the equation below when $r = -7$?

$$P = 4 - 2r$$

a -14

b -10

c 14

ⓓ 18

1 What is the value of $5x^3y^2$ when $x = 2$ and $y = 4$?

   a   240

   b   320

   c   480

   (d) 640

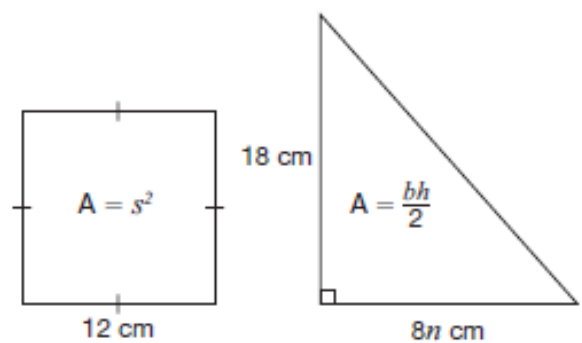**2** What exponent goes in the box to make the following equation true?

$$\frac{x^{\square}x^6}{x^2} = x^{12}$$

   a   9

   (b) 8

   c   4

   d   3

4 Which of the following is a simplified form of the expression $4(5x - 8) - 3(2x - 7)$?

   (a) $14x - 11$

   b $14x - 53$

   c $26x - 11$

   d $26x - 53$

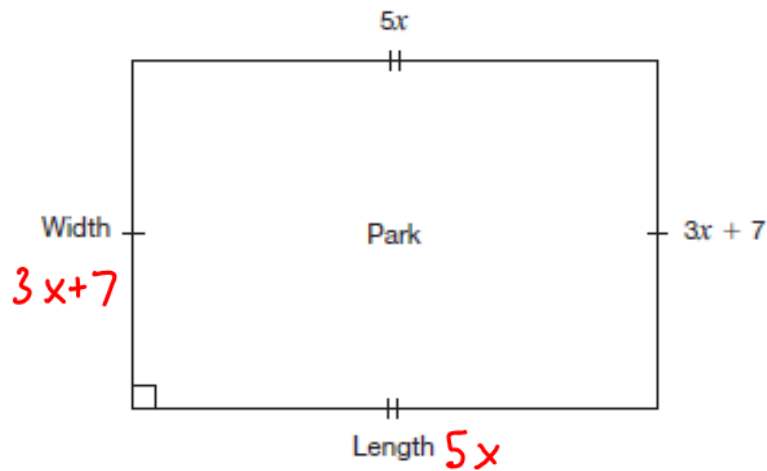**5** The square and the triangle below have the same area.

Square: $A = s^2$, sides 18 cm and 12 cm.
Triangle: $A = \frac{bh}{2}$, base $8n$ cm.

What is the value of n?

   a   1

   (b) 2

   c   8

   d   16

2017

9 Walking Around the Park

A park in the shape of a rectangle is pictured with algebraic expressions representing its length and width, in metres.

$5x$

Width — Park — $3x + 7$

3x+7

Length **5x**

The perimeter of the park, P, can be determined using the equation

$$P = 2l + 2w.$$

Determine an equation to represent the perimeter of the park using the given sides.

$P =$ ___**5x + 3x+7 + 5x + 3x+7**___ **(Add up all 4 sides)**

The perimeter of the park is **350 m**.

Determine the length of the park. Show your work.

$P = 5x + 5x + 3x + 3x + 7 + 7$

$P = 16x + 14$

$350 = 16x + 14$

$350 - 14 = 16x$

$336 = 16x$

$\dfrac{336}{16} = \dfrac{16x}{16}$

$\boxed{21 = x}$

length → $5x$
$= 5(21)$
$= 105\,m$

∴ the length is 105m

2016

9 Floored Areas

The diagram of the floor shown below has algebraic expressions for the lengths of its sides, in metres.

Split the diagram into two pieces →

$4x - 3$

$5x$

$7x$

$\leftarrow x \rightarrow$

$2x$

$3x - 3$
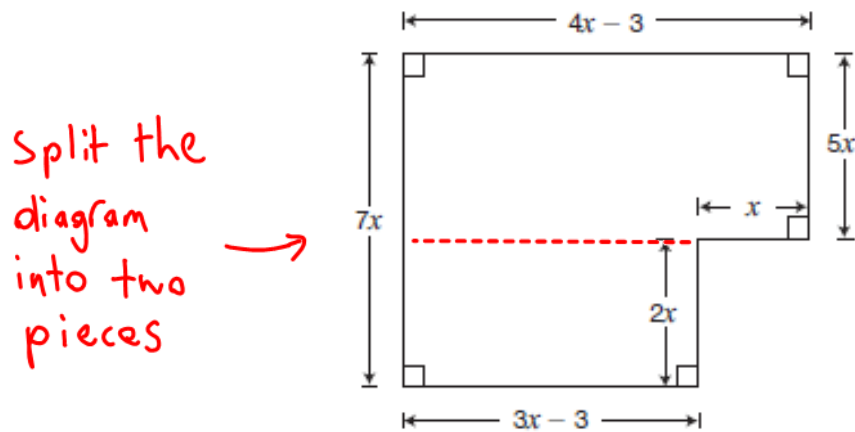
Determine an unsimplified expression for the **total area** of the floor, A, in m².

$$A = \underline{(4x-3)(5x) + (3x-3)(2x)}$$

Simplify your expression fully. Show your work.

$A = (4x-3)(5x) + (3x-3)(2x)$

$A = 20x^2 - 15x + 6x^2 - 6x$

$A = 20x^2 + 6x^2 - 15x - 6x$

$\boxed{A = 26x^2 - 21x}$